Overview
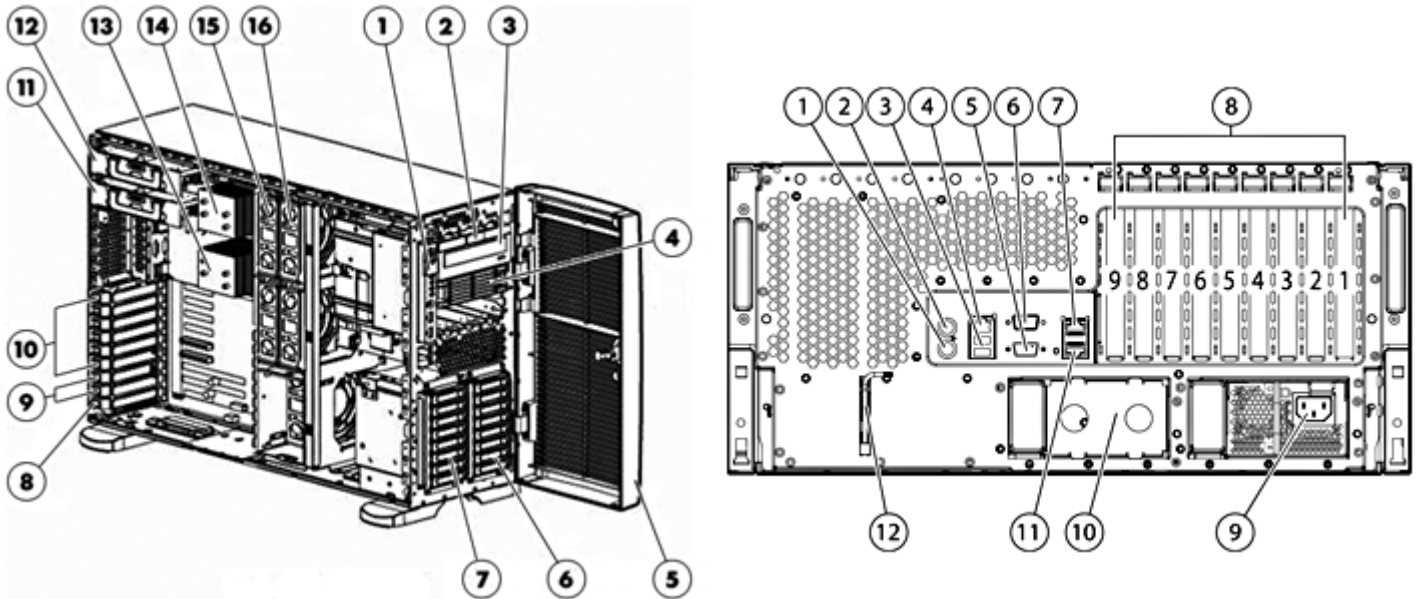
HP ProLiant ML370 G5 Model (tower)
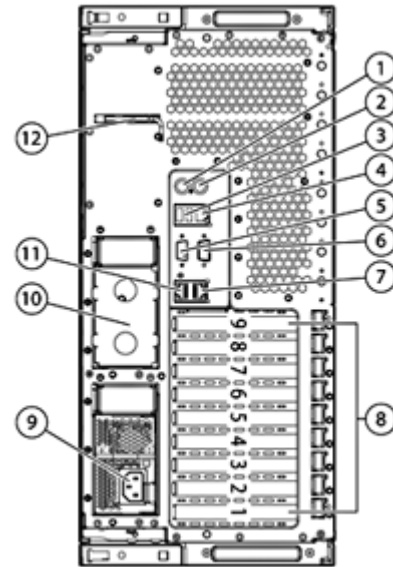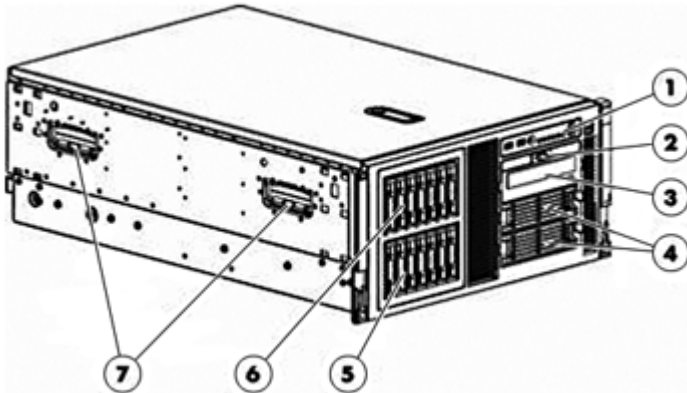

Front View:

1. System Insight Display (SID)
2. Media Bay Spacer (Tower)/Video Connector (Rack)
3. DVD/CD-ROM Drive
4. Removable Media Bays
5. Front Bezel (Tower Model Only)
6. Hard Drive Bays 1-8 (Serial-attached SCSI (SAS) drives supported - SFF)
7. Hard Drive Bays 9-16 - Optional Drive Cage (Serial-attached SCSI (SAS) drives supported - SFF)
8. Integrated RAID Controller Slot
9. (2) PCI-X 64 Bit/133MHz Slot
10. (6) PCI-Express x4 Slot
11. (8) PC2-5300 Fully Buffered DIMM Slots per memory card - Standard
12. (8) PC2-5300 Fully Buffered DIMM Slots per memory card - Optional
13. Dual-Core Intel Xeon processor - Optional
14. Dual-Core Intel Xeon processor - Standard (2 processors standard on all Performance Models)
15. (3) Hot Plug Redundant Fans - Standard
16. (3) Hot Plug Redundant Fans - Optional

Rear View:

1. Keyboard connector
2. Mouse connector
3. USB connectors
4. Integrated Lights-Out 2 (iLO 2) management connector
5. Video connector
6. Serial connector
7. NIC 2 connector
8. PCI expansion slots
9. Hot-plug power supply (primary bay)
10. Hot-plug power supply blank (redundant bay)
11. NIC 1 connector
12. T-15 Torx screwdriver

Overview

HP ProLiant ML370 G5 Model (Rack)

Front View:

1. System Insight Display (SID)
2. Video Connector
3. DVD/CD-ROM Drive
4. Removable Media Bays
5. Hard Drive Bays 1-8 (Serial-attached SCSI (SAS) drives supported - SFF)
6. Hard Drive Bays 9-16 - Optional Drive Cage (Serial-attached SCSI (SAS) drives supported - SFF)
7. Rack Handles

Rear View:

1. Keyboard connector
2. Mouse connector
3. USB connectors
4. Integrated Lights-Out 2 (iLO 2) management connector
5. Video connector
6. Serial connector
7. NIC 2 connector
8. PCI expansion slots
9. Hot-plug power supply (primary bay)
10. Hot-plug power supply blank (redundant bay)
11. NIC 1 connector
12. T-15 Torx screwdriver

What's New

- Quad Core Intel Xeon Processor 5400 Series

At A Glance

The flagship ML370 G5 provides industry-leading management, performance and availability in a dual processor expansion server engineered to excel in a variety of environments - from corporate work groups in growing businesses to critical remote sites requiring continuous accessibility and uptime.

- Processors:
  - Quad-core Intel® Xeon™ 5400 sequence processors with 12MB Level 2 cache (6MB per die) for blazing performance
  - Quad-core Intel Xeon 5300 sequence processors with 8MB Level 2 cache (2MB per core)
  - Dual-core Intel Xeon 5100 & 5000 sequence processors with 4MB Level 2 cache (2MB per core)

Overview

- o Servers support up to 2 processors (2 processors standard on all Performance models)
- o Preconfigured Performance models save valuable deployment time at a discounted bundle price
- o Intel 5000P chipset
- **Memory:**
    - o Maximum 64 GB of PC2-5300 Fully Buffered DIMMs (DDR2-667) running at 667MHz of 4:1 interleaved memory with Advanced ECC capabilities including Online Spare and Mirrored Memory (8 FB DIMMs per memory card; up to 2 supported)
      NOTE: Memory DIMMs in systems with the Front Side Bus (FSB) running at 1333 MHz will run at 667 MHz and in systems with a FSB running at 1066 MHz or 667 MHz the memory DIMMs will run at 533 MHz.
- **Storage Controller:**
    - o Base Models: HP Smart Array P400/256MB Controller
    - o Performance Models: HP Smart Array P400/512MB BBWC Controller
    - o Entry Models: HP Smart Array E200/64MB Controller
- **Internal Drive Support:**
    - o Up to (16) hot-plug Serial-attached SCSI (SAS) drives supported
    - o (8) drive bays in standard configurations
    - o Optional 8-bay drive cage available for maximum storage support (2nd drive bay cage will require additional SAS controller)
    - o Two open half-height media bays; supports full height or half height internal tape drive
- **Network Controller:**
    - o Two embedded NC373i Multifunction Gigabit Network Adapters with TCP/IP Offload Engine, including support for Accelerated iSCSI through an optional Licensing Kit
- **Expansion Slots:**
    - o Nine total expansion slots
    - o Eight available: (6) PCI-Express x4 and (2) PCI-X 64-Bit/133MHz
- **USB Ports:**
    - o USB 2.0 support
    - o Six total ports: (2) ports up front; (2) ports in back; (2) ports internal (one standard connection and one USB tape connection)
- **Redundancy:**
    - o Optional Hot plug redundant power supplies and cooling fans
    - o Hot plug redundant fans and power supplies included on all Performance models
- **Management:**
    - o HP Insight Control Environment server management software
    - o Integrated Lights-Out 2 featuring Integrated Remote Console with KVM over IP performance over shared network access
    - o HP Power Regulator for ProLiant, delivering integrated power monitoring and server level, policy based power management for industry leading energy efficiency and savings on system power and cooling costs
    - o Automatic Server Recovery (ASR), ROM Based Setup Utility (RBSU), HP System Insight Manager, Status LEDs including system health and UID and SmartStart
    - o Systems Insight Display for quick and easy server diagnostics (front drop-down panel)
- **Form Factor:**
    - o 5U tower and rack models available (front VGA connection on rack models)
- **Deployment/Serviceability:**
    - o Quick Deploy Rail System includes sliding universal rails, an ambidextrous cable management arm and quick release levers
    - o Tool-less access to all system components for easy in-rack serviceability
- **Warranty:**
    - o This product is covered by a global limited warranty and supported by HP Services and a worldwide network of HP Authorized Channel Partners resellers. Hardware diagnostic support and repair is available for three years from date of purchase. Support for software and initial setup is available for 90 days from date of purchase. Enhancements to warranty services are available through HP Care Pack services or customized service agreements. SATA hard drives

Overview

have a one-year warranty.
NOTE: Server Warranty includes 3-Year Parts, 3-Year Labor, 3-Year Onsite support with next business day response.
Additional information regarding worldwide limited warranty and technical support is available at:
http://h18004.www1.hp.com/products/servers/platforms/warranty/index.html

QuickSpecs

Standard Features

NOTE: For a brief, printer friendly data sheet that describes this product and informs you of the essential capabilities and specifications, please visit: http://h71028.www7.hp.com/ERC/downloads/4AA0-6361ENW.pdf.
NOTE: For the Standard Features shipped in the "Factory Integrated Models", please see the "Configuration Information - Factory Integrated Models" section.

Processor One of the following depending on Model	Quad-Core Intel Xeon Processor X5460 (3.16 GHz, 120 Watts, 1333 Front Side Bus (FSB) Quad-Core Intel Xeon Processor X5450 (3.00 GHz, 120 Watts, 1333 Front Side Bus (FSB) NOTE: Available via CTO only. Quad-Core Intel Xeon Processor E5450 (3.00 GHz, 80 Watts, 1333 Front Side Bus (FSB) NOTE: Available via CTO only. Quad-Core Intel Xeon Processor E5440 (2.83 GHz, 80 Watts, 1333 Front Side Bus (FSB) Quad-Core Intel Xeon Processor E5430 (2.66 GHz, 80 Watts, 1066 Front Side Bus (FSB) Quad-Core Intel Xeon Processor E5420 (2.50 GHz, 80 Watts, 1066 Front Side Bus (FSB) Quad-Core Intel Xeon Processor E5410 (2.33 GHz, 80 Watts, 1066 Front Side Bus (FSB) Quad-Core Intel Xeon Processor X5365 (3.00 GHz, 120 Watts, 1333 Front Side Bus (FSB) Quad-Core Intel Xeon Processor X5355 (2.66 GHz, 120 Watts, 1333 FSB) Quad-Core Intel Xeon Processor E5345 (2.33 GHz, 80 Watts, 1333 FSB) Quad-Core Intel Xeon Processor E5335 (2.00 GHz, 80 Watts, 1333 FSB) Quad-Core Intel Xeon Processor E5320 (1.86 GHz, 80 Watts, 1066 FSB) Quad-Core Intel Xeon Processor E5310 (1.60 GHz, 80 Watts, 1066 FSB) Dual-Core Intel Xeon Processor 5160 (3.0 GHz, 80 Watts, 1333 FSB) Dual-Core Intel Xeon Processor 5150 (2.67 GHz, 65 Watts, 1333 FSB) Dual-Core Intel Xeon Processor 5140 (2.33 GHz, 65 Watts, 1333 FSB) Dual-Core Intel Xeon Processor 5130 (2.0 GHz, 65 Watts, 1333 FSB) Dual-Core Intel Xeon Processor 5120 (1.86 GHz, 65 Watts, 1066 FSB) Dual-Core Intel Xeon Processor 5110 (1.6 GHz, 65 Watts, 1066 FSB) Dual-Core Intel Xeon Processor 5080 (3.73 GHz, 130 Watts, 1066 FSB) Dual-Core Intel Xeon Processor 5060 (3.2 GHz, 130 Watts, 1066 FSB) Dual-Core Intel Xeon Processor 5050 (3.0 GHz, 95 Watts, 667 FSB) NOTE: Up to 2 processors supported. Performance configurations include two processors.
Cache Memory One of the following depending on Model	4MB (2 x 2MB) Level 2 cache (5000 series) 4MB (1 x 4MB) Level 2 cache (5100 series) 8MB (2 x 4MB) Level 2 cache (5300 series) 12MB (2 x 6MB) Level 2 cache (5400 series)
Chipset	Intel 5000P Chipset NOTE: For more information regarding Intel chipsets, please see the following URL: http://www.intel.com/products/server/chipsets/.

Standard Features

Upgradeability	Upgradeable to 2 processors **NOTE:** Please contact your regional sales support to determine quad core upgradeability. Some of the earlier shipping models may not support this upgrade.

Memory Protection	Advanced ECC, Online Spare and Mirroring **NOTE:** Mirroring requires optional 2nd memory card.

Memory
One of the following
depending on Model

Type	PC2-5300 Fully Buffered DIMMs (DDR2-667) running at 533 MHz with 4:1 interleaving **NOTE:** 4-way interleaving requires optional 2nd memory card.
Standard (Entry Models)	1 GB (2 x 512 MB)
Standard (Base Models)	2 GB (2 x 1 GB)
Standard (Performance Models)	4 GB (4 x 1 GB)
Maximum	64 GB (16 x 4 GB with 2 memory cards)

NOTE: Memory DIMMs in systems with the Front Side Bus (FSB) running at 1333 MHz will run at 667 MHz and in systems with a FSB running at 1066 MHz or 667 MHz the memory DIMMs will run at 533 MHz.

Network Controller	Two embedded NC373i Multifunction Gigabit Network Adapters with TCP/IP Offload Engine, including support for Accelerated iSCSI through an optional Licensing Kit

Expansion Slots

Slot Number	Bus Speed	Bus Number*	Device Number**	PCI Voltage	Notes
1	PCI Express x4	6	0	N/A	Reserved for integrated RAID controller
2	64-bit/133MHz PCI-X	18	1	3.3 Volt	Shared bus with slot 3
3	64-bit/133MHz PCI-X	18	2	3.3 Volt	Shared bus with slot 2
4	PCI Express x4	14	0	N/A	
5	PCI Express x4	11	0	N/A	Optional x8 if PCIE expander is installed in slot 4
6	PCI Express x4	31	0	N/A	
7	PCI Express x4	28	0	N/A	Optional x8 if PCIE expander is installed in slot 6
8	PCI Express x4	25	0	N/A	
9	PCI Express x4	22	0	N/A	Optional x8 if PCIE expander is installed in slot 8

Standard Features

NOTE: x8 cards are supported but will run at x4 speeds. X8 speed can be supported with optional PCIE x4/x8 expansion card option on select slots
*NOTE: Default bus assignment. Inserting cards with PCI bridges may alter the actual bus assignment number.
**NOTE: Slots are enumerated differently based on OS. MS OS's enumerate from lowest to highest Device ID by bus (starting with the lowest bus).

Storage Controller One of the following depending on Model	Base Models	HP Smart Array P400/256MB Controller (RAID 0/1/1+0/5) **Available upgrades:** 512MB memory BBWC module for, or battery for battery-backed write cache (BBWC) RAID 0/1/1+0/5/6.
	Performance Models	HP Smart Array P400/512MB BBWC Controller (RAID 0/1/1+0/5/6)
	Entry Models	HP Smart Array E200/64MB Controller (RAID 0/1/1+0) **Available upgrades:** 128MB memory module for RAID 0/1/1+0/5, battery for battery-backed write cache (BBWC).

Storage	Diskette Drive	None standard
	Optical Drive One of the following depending on Model (All units after 11/12/2007 will come standard with a DVD-ROM Drive.)	DVD-ROM Drive (Performance Models) 48x IDE CD-ROM Drive (Base and Entry Models)
	Hard Drives	None standard

Maximum Internal Storage	Hot Plug Serial-Attached SCSI (SAS)	1.168TB	8 x 146GB with standard 8-bay hot plug Serial-attached SCSI (SAS) drive cage
		2.336TB	16 x 146GB with optional 2nd SAS drive cage

Remote Management   Integrated Lights-Out (iLO 2) Management 2

- Virtual Text Remote Console (pre-OS only)
- Remote Serial Console
- Virtual Power Button Control
- Virtual Unit ID control
- Integrated Remote Console (ActiveX Control client)
- Dedicated & full function shared network connectivity with VLAN
- Embedded system health
- Present power consumption
- Browser, command line and scripted access
- Automatic IP Configuration via DHCP/DNS/WINS
- Industry Standard 128-bit Secure Sockets Layer (SSL) and Secure Shell security (SSH)
- Advanced Encryption Standard (AES)/Triple Data Encryption Standard (3DES)
- OS independent hardware health status
- IML and iLO Event Logging
- Support for 12 user accounts with customizable access privilege

Standard Features

Intelligent Manageability	HP Systems Insight Manager
	SmartStart
	Management Agent
	Redundant ROM
	Remote Flash ROM
	ROM-Based Setup Utility (RBSU)
	Integrated Management Log
	Automatic Server Recovery (ASR)
	Dynamic Sector Repairing (with Smart Array controller)
	Drive Parameter Tracking (with Smart Array controller)
	Hot Spare Boot
	NOTE: Upon the event of a failed processor in a multi-processing environment, the system will automatically reboot and attempt to use the remaining good processor.
	Pre-Failure Warranty (covers processors, SAS hard drives and memory)

Interfaces		
	Serial	1 (2nd serial and parallel port available via option Kit)
	Pointing Device (Mouse)	1
	VGA	1 (+1 front VGA on rack models)
	Keyboard	1
	Network RJ-45	2
	iLO 2 remote management port	1
	USB 2.0 Ports	5 (2 on the rear, 2 on the front, 1 internal) **NOTE:** Please see the following URL for additional information regarding USB support: http://h18004.www1.hp.com/products/servers/platforms/usb-support.html
	Dedicated USB 2.0 Port	1 (available for DAT USB tape connectivity) **NOTE:** Internal USB ports are optimal for the attachment of HP DAT USB Internal Tape Drives

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Graphics	Integrated ATI ES1000, 32MB video standard
	• 16 bit color: maximum resolution of 1600 x 1200
	• 32 bit color: maximum resolution of 1280 x 1024
	NOTE: Maximum resolution available via iLO 2 remote console is 1280x1024.

Form Factor	Tower and Rack (5U) models available

Standard Features

ProLiant Essentials Foundation Pack Software	HP Systems Insight Manager	HP Systems Insight Manager (HP SIM) provides a unified, secure and extensible environment to centrally manage servers, storage and other infrastructure devices across multiple operating system platforms.

Through a single management view, HP SIM provides core management services that include device discovery and identification, event views, health monitoring, inventory data collection, software version control and reporting. HP SIM is built on industry standards and is extensible with value-added ProLiant Essentials, Integrity Essentials and Storage Essentials software to meet individual management needs. For more details on HP SIM visit http://www.hp.com/go/hpsim.

HP SIM provides organizations with the following benefits:

- Simplifies and consolidates infrastructure lifecycle management using task and query based functionality
- Provides the foundation for infrastructure automation and virtualization
- Enables IT management based on business processes not hardware platforms
- Lowers infrastructure maintenance cost and frees resources for innovation
- Maximizes resource utilization with virtualization technologies
- Provides a central point of integration between infrastructure and Enterprise management tools such as HP OpenView

SmartStart

SmartStart is a tool that simplifies server setup, providing a rapid way to deploy reliable and consistent server configurations. For more information, please visit the SmartStart Web site at http://www.hp.com/servers/smartstart. SmartStart version supported (minimum): SmartStart 7.51

Insight Management Agents

Insight Management Agents should be installed on all HP servers to present system instrumentation, health and configuration information into HP Systems Insight Manager and the HP System Management Homepage. The HP System Management Homepage aggregates systems data from Insight Management Agents and other HP management tools, providing a consolidated browser-based interface for managing individual servers,

Insight Management Agents and The HP System Management Homepage are included on ProLiant Support Packs, and can also be installed using the server profiles provided with the ProLiant Essentials Rapid Deployment Pack. For additional information about the Management Agents and the HP System Management Homepage please visit the management Web site at http://www.hp.com/servers/manage.

Subscriber's Choice

Subscriber's Choice Driver and Support Alerts/Notifications is a web-based email subscription service that provides automatic delivery of software and driver change notifications for ProLiant products. Sign up at http://www.hp.com/go/subscriberschoice and customize your profile to receive various new alerts as they become available, on a weekly or monthly basis.

Standard Features

ROMPaq, support software, and configuration utilities	The latest software, drivers, and firmware fully optimized and tested for your ProLiant server and options available in SmartStart or downloadable from Software and Drivers download pages http://www.hp.com/go/support.
Insight Diagnostics	The most advanced configuration analysis, reporting and troubleshooting utilities used by HP and at your fingertips, available in SmartStart.
Optional ProLiant Essentials Value Packs	Optional software offerings that selectively extend the functionality of an Adaptive Infrastructure to address specific business problems and needs:

- **Insight Control Environment** - is based on HP Systems Insight Manager and ProLiant Essentials software, and brings the value of Insight Control to ProLiant customers by delivering comprehensive health and performance monitoring, remote control, vulnerability scanning and patch management as well as flexible deployment and power management through an integrated installation package and streamlined licensing. For more information, visit: http://www.hp.com/go/ice
- **Accelerated iSCSI Pack** - enables the embedded Multifunction network controller to serve as both a NIC and an iSCSI HBA providing access to SAN storage over the same connection used for networking. Processing of the protocol stack is offloaded to the NIC reducing CPU utilization and greatly improving the speed with which the requests are processed and sent to the network.
- **Rapid Deployment Pack** (RDP) is an automated deployment and provisioning solution for all ProLiant servers. RDP includes the ProLiant Integration Module featuring ProLiant server pre-configured events for OS installation, and optimized software drivers, firmware and management agents. Every RDP disc includes 7-day, 10-node trial licenses for evaluation purposes. RDP requires a license for each server deployed and is available for purchase with HP servers. For more information, visit: http://www.hp.com/servers/rdp.
- **Server Migration Pack - Universal Edition** - Upgrading, replacing, or virtualizing your existing server? Effortlessly transition to new virtual or physical HP ProLiant servers or BladeSystem with automated, accurate and affordable migration of OS, application and data. SMP Universal automates the manual processes required for migrating servers between physical or virtual platforms, whether migrating to VMware or Microsoft virtual machines. SMP Universal allows all of the following:
  - Physical to ProLiant
  - Physical to virtual
  - Virtual to virtual
  - Virtual to ProLiant
- **Performance Management Pack** (offered exclusively through the Insight Control suites) - a performance management solution that identifies and explains hardware performance bottlenecks on ProLiant servers and attached options enabling users to better utilize their valuable resources.
- **Remote Directory Memory Access** (RDMA) **Pack** - for Embedded Multifunction Gigabit Server Adapters - provides direct and faster communication between application buffers in separate servers for tasks that involves moving large amounts of data, such as network backups, database read/write, and high performance computing.

Standard Features

Optional Remote Management Packs	• **Integrated Lights-Out Advanced Pack** - upgrades the iLO 2 processor with comprehensive remote control including Virtual KVM remote graphical console, enhanced console sharing and replay, virtual media (floppy, CD/DVD, USB key), virtual folders, historical power reporting, power capping and enterprise security (directory services and two-factor authentication).
	• **Integrated Lights-Out Select Pack** - upgrades the iLO 2 processor with enhanced console sharing and replay, virtual media (floppy, CD/DVD, USB key), virtual folders, historical power reporting, power capping and enterprise security (directory services and two-factor authentication) for servers managed using remote consoles available in iLO 2 Standard and iLO 2 Standard Blade Edition.
	• **Insight Power Manager** (IPM) - upgrades the single-server remote management capabilities of iLO Select/Advanced to include centralized reporting and policy-based management of power consumption and thermal output provided by the Insight Power Manager. IPM unifies all of this functionality within a single user interface - HP Systems Insight Manager.

NOTE: Flexible and volume quantity license kits are available for ProLiant Essentials Value Packs. Refer to http://www.hp.com/servers/ProLiantessentials or the various ProLiant Essentials Value Pack product QuickSpecs for more information.
NOTE: For more information regarding ProLiant Essentials Software, please see the following URL: http://www.hp.com/servers/ProLiantessentials.

Industry Standard Compliance	ACPI 1.0b Compliant PCI 2.2 Compliant WOL Support Microsoft® Logo certifications PXE Support
Security	Power-on password Keyboard password Diskette drive control Diskette boot control QuickLock, Network Server Mode Parallel and serial interface control Administrator's password
Server Power Cords	110V NEMA -6ft. (1.83m) cord included in the United States; localized cables included with geographic specific models in other world regions. IEC 6 ft. (1.83m) cords also included with rack models. Localized cables included with geographic specific models in other world regions. **NOTE:** HP ProLiant ML370 a C13 to C14 2.8M jumper cord ships standard. If customers require a local power cord, they can check the power cord matrix for the appropriate country specific sku. Please see the following power cord matrix: http://www.hp.com/go/powercordmatrix.

QuickSpecs

HP ProLiant ML370 Generation 5 (G5)

Standard Features

Power Supply	800 Watt-CE Mark Compliant Hot Plug Power Supply (1000 Watt high line) Optional second Power Supply provides redundant capability NOTE: Please see the "Power Specifications" section later in this document for low line and high line requirements.
UPS and PDU Power Cord Matrix	Please see the UPS and PDU cable matrix that lists cable descriptions, requirements, and specifications for UPS and PDU units: http://h18004.www1.hp.com/products/servers/proliantstorage/power-protection/index.html.
System Fans	Three hot-plug fans standard. Redundant fan kit includes three additional fans.
Required Cabling	For external storage cabling information, refer to the Web site at http://h18000.www1.hp.com/products/servers/ProLiantML370/.
OS Support	Microsoft Windows 2000 Server Windows Server 2003 Server Novell NetWare SCO OpenServer and OpenUNIX Red Hat Enterprise Linux SUSE Linux Enterprise Server VMware Virtualization Software NOTE: For more complete and up-to-date information on how to buy server operating systems from HP please visit the OS product site at: http://h18004.www1.hp.com/products/servers/software/OEM.html NOTE: For a more complete and up-to-date listing of supported OSs and versions, please visit our OS Support Matrix at: http://www.hp.com/go/supportos NOTE: For an up-to-date listing of the latest drivers available for the HP ProLiant ML370 G5, please see: http://h18023.www1.hp.com/support/files/server/us/index.html NOTE: For more Linux OS support & certification information, please visit the ProLiant & BladeSystem Server Linux matrix http://h18004.www1.hp.com/products/servers/linux/hpLinuxcert.html NOTE: For more information on HP's Certified and Supported ProLiant Servers, please visit the VMware Server Support Matrix at: http://h18004.www1.hp.com/products/servers/software/vmware/hpvmwarecert.html

Standard Features

Rack Airflow Requirements	**Rack 10000 series Cabinets**

The increasing power of new high-performance processor technology requires increased cooling efficiency for rack-mounted servers. The 10000 Series Racks provide enhanced airflow for maximum cooling, allowing these racks to be fully loaded with servers using the latest processors.

CAUTION: If a third-party rack is used, observe the following additional requirements to ensure adequate airflow and to prevent damage to the equipment:

- Front and rear doors: If your 42U server rack includes closing front and rear doors, you must allow 830 square inches (5,350 sq cm) of hole evenly distributed from top to bottom to permit adequate airflow (equivalent to the required 64 percent open area for ventilation).
- Side: The clearance between the installed rack component and the side panels of the rack must be a minimum of 2.75 inches (7 cm).

CAUTION: Always use blanking panels to fill all remaining empty front panel U-spaces in the rack. This arrangement ensures proper airflow. Using a rack without blanking panels results in improper cooling that can lead to thermal damage.

NOTE: For additional information, refer to the Setup and Installation Guide or the Documentation CD provided with the server, or to the server documentation located in the Support section at the following URL: http://h18000.www1.hp.com/products/servers/proLiantdl380/index.html.

Installation of HP ProLiant ML370 G5 servers with Round Hole, Third Party or Telco Racks

ProLiant rack mount servers and tower-to-rack kits include snap-on quick deploy side rails designed to accommodate both round and square hole rack rails. Telco rack solutions for ProLiant servers are available through the following URL: http://www.racksolutions.com/hp.

Factory Express Portfolio for Servers and Storage

HP Factory Express offers configuration, customization, integration and deployment services for HP servers and storage products. Customers can choose how their factory solutions are built, tested, integrated, shipped and deployed.

Factory Express offers service packages for simple configuration, racking, installation, complex configuration and design services as well as individual factory services, such as image loading, asset tagging, and custom packaging. HP products supported through Factory Express include a wide array of servers and storage: HP Integrity, HP ProLiant, HP ProLiant Server Blades, HP BladeSystem, HP 9000 servers as well as the MSA1000, VA7xxx, EVA, XP, rackable tape libraries and configurable network switches.

For more information on Factory Express services for your specific server model please contact your sales representative or go to http://www.hp.com/go/factory-express.

HP ProLiant Smart Buys (NA only)

The HP Smart Buy program offers mainstream business solutions at competitive prices with excellent availability and superior HP quality. It offers a wide range of industry-leading HP products at compelling prices, allowing you to receive richer configurations with additional options.

NOTE: ProLiant Smart Buys are available in NA only. For detailed specification information on ProLiant Smart Buys please click on the following link: ftp://ftp.compaq.com/pub/products/servers/smartbuys.pdf

Standard Features

HP Enterprise Configurator	The HP eCo-Enterprise Configurator now provides factory default racking for our HP hardware portfolio. This approach is aligned with our strategic direction to meet the needs and expectations of our valued customers. If you require "custom" rack configuration, please contact HP's Customer Business Center or an Authorized Partner for assistance.

Service and Support

HP Care Pack services provide total care and support expertise with committed response designed to meet your IT and business needs.

HP Care Pack services include coverage for the HP branded hardware options qualified for the server and purchased at the same time or afterward that are internal to the enclosure. This also includes the 22" and smaller external monitors and tower UPS options up to 3kVA. These items will be covered at the same service level and for the same coverage period as the server. Coverage of UPS Battery is not included, and standard warranty terms & conditions apply. For servers or storage systems installed within a rack, service also covers all HP qualified rack options installed within the same rack.

To fully capitalizing on your HP ProLiant servers' capabilities requires a service partner who thoroughly understands your server technology and systems environment. HP Services, an industry leader in provision of multi vender support solutions, provides a range of support services designed to meet the varying needs of your business. Whether an SMB, or large global corporation, HP has a ProLiant server support offer to help you speedily deploy and maximize system uptime.

Recommended Service - simplify ProLiant solution implementation, maintenance, and management.

- **Support**: 3-Year 4-Hour response 24x7 Same Business Day Coverage only
- **Deployment Service**: Installation and Start up only

Enhanced Service - optimize service level to increase IT performance and availability.

- **Support**: 3-Year Support Plus 24 only

Refer to the information on "Installation & Start-Up" for service on ProLiant server and Microsoft or Linux O/S per the Customer Description and/or Data Sheet; to be delivered on a scheduled basis 8am-5pm, M-F, excluding HP holidays.

NOTE: For a complete listing of service offerings and information visit:
http://www.hp.com/services/proliantservices
http://www.hp.com/go/proliant/carepack

Models

NOTE: ProLiant Smart Buys are available in NA only. For detailed specification information on ProLiant Smart Buys please click on the following link: ftp://ftp.compaq.com/pub/products/servers/smartbuys.pdf.

HP ML370 G5 Performance Models	Processor(s) Two of the following depending on Model	(2) Quad-Core Intel Xeon Processor X5450 (3.00 GHz, 120 Watts, 1333 FSB) (2) Quad-Core Intel Xeon Processor E5345 (2.33 GHz, 80 Watts, 1333 FSB) (2) Dual-Core Intel Xeon Processor 5150 (2.67 GHz, 65 Watts, 1333 FSB)
Tower Models: Quad-Core: ML370T05 X5450 458341-xx1 ML370T05 E5345 433752-xx1 Dual-Core: ML370T05 5150 416619-xx1	Cache Memory One of the following depending on Model	12MB (2 x 6MB) Level 2 cache - 5400 Sequence 8MB (2 x 4MB) Level 2 cache - 5300 Sequence 4MB (1 x 4MB) Level 2 cache - 5100 Sequence
	Memory	4 GB (4 x 1 GB); 2 memory cards (2 x 1GB ea.card)
	Network Controller	Embedded NC373i Multifunction Gigabit Sever Adapters
	Storage Controller	HP Smart Array P400/512MB BBWC Controller (RAID 0/1/1+0/5/6)
Rack Models: Quad-Core: ML370R05 X5450 458342-xx1	Hard Drive	None ship standard
	Internal Storage	1.168TB maximum
ML370R05 E5345 433753-xx1	Optical Drive	DVD-ROM Drive (diskette drive optional)
	Availability	Hot Plug Fully Redundant fans and Hot Plug supplies standard
Dual-Core: ML370R05 5150 416620-xx1	Form Factor One of the following depending on Model	Tower Rack (5U), (8.75-inch)

HP ML370 G5 Base Models	Processor(s) One of the following depending on Model	(1) Quad-Core Intel Xeon Processor E5440 (2.83 GHz, 80 Watts, 1333 FSB) (1) Quad-Core Intel Xeon Processor E5430 (2.66 GHz, 80 Watts, 1333 FSB) (1) Quad-Core Intel Xeon Processor E5320 (1.86 GHz, 80 Watts, 1066 FSB) (1) Quad-Core Intel Xeon Processor E5335 (2.00 GHz, 80 Watts, 1333 FSB) (1) Dual-Core Intel Xeon Processor 5150 (2.67 GHz, 65 Watts, 1333 FSB) (1) Dual-Core Intel Xeon Processor 5140 (2.33 GHz, 65 Watts, 1333 FSB)
Tower Models: Quad-Core: ML370T05 E5440 458343-xx1 ML370T05 E5430 458345-xx1 ML370T05 E5320 433750-xx1 ML370T05 E5335 437437-xx1	Cache Memory One of the following depending on Model	12MB (2 x 6MB) Level 2 cache - 5400 Sequence 8MB (2 x 4MB) Level 2 cache - 5300 Sequence 4MB (1 x 4MB) Level 2 cache - 5100 Sequence
Dual-Core: ML370T05 5150 417188-xx1	Memory	2 GB (2 x 1 GB); 1 memory card
ML370T05 5140 417446-xx1	Network Controller	Embedded NC373i Multifunction Gigabit Sever Adapters
Rack Models: Quad-Core:	Storage Controller	HP Smart Array P400/256MB Controller (RAID 0/1/1+0/5)
ML370R05 E5440 458344-xx1	Hard Drive	None ship standard

Models

458344-xx1
ML370R05 E5430
458346-xx1
ML370R05 E5320
433751-xx1
ML370R05 E5335
437438-xx1

Dual-Core:
ML370R05 5150
417189-xx1
ML370R05 5140
417447-xx1

Internal Storage	1.168TB maximum	
Optical Drive DVD-ROM standard after 11/12/07	48x CD-ROM Drive (diskette optional)	
Availability	Redundant Power/Fans Optional	
Form Factor One of the following depending on Model	Tower Rack (5U), (8.75-inch)	

HP ML370 G5 Entry Models

Tower Models:
Quad-Core:
ML370T05 E5410
458347-xx1

Dual-Core:
ML370T05 5120
417444-xx1

Rack Models:
Quad-Core:
ML370R05 E5410
458348-xx1

Dual-Core:
ML370R05 5120
417445-xx1

Processor(s) One of the following depending on Model	(1) Quad-Core Intel Xeon Processor E5410 (2.33 GHz, 80 Watts, 1066 FSB)
	(1) Dual-Core Intel Xeon Processor 5120 (1.86 GHz, 65 Watts, 1066 FSB)
Cache Memory One of the following depending on Model	12MB (2 x 6MB) Level 2 cache - 5400 Sequence
	4MB (1 x 4MB) Level 2 cache - 5100 Sequence
Memory	1 GB (2 x 512 MB) Level 2 cache
Network Controller	Embedded NC373i Multifunction Gigabit Sever Adapters
Storage Controller	HP Smart Array E200/64MB Controller (RAID 0/1/1+0)
Hard Drive	None ship standard
Internal Storage	1.168TB maximum
Optical Drive DVD-ROM standard after 11/12/07	48x CD-ROM (diskette optional)
Availability	Redundant Power/Fans Optional
Form Factor One of the following depending on Model	Tower Rack (5U), (8.75-inch)

Country Code Key

	Tower Code Key	Rack Code Key
XX=00	U.S. English	U.S. English
XX=01	Australia	N/A
XX=03	UK	N/A
XX=04	Germany	N/A
XX=05	France	N/A
XX=20	Brazil	Brazil
XX=29	Japan	Japan
XX=37	APD	APD
XX=42	Europe	Europe
XX=AA	PRC	PRC

QuickSpecs

Configuration Information - Factory Integrated Models

NOTE: This section lists some of the steps required to configure a Factory Integrated Model. To ensure only valid configurations are ordered, HP recommends the use of an HP approved configurator. Contact your local sales representative for information on CTO product offerings and requirements.
NOTE: HP does not allow factory integration of options into standard models listed above. Configure-to-order servers must start with a CTO Chassis.
NOTE: This product offering does not support HP Factory Express Server Configuration Level 1.
NOTE: FIO indicates that this option only available as a Factory Installable Option.

Step 1: Base Configuration (choose one of the following configurable models)

Models   **HP ML370 G5 Rack SAS CTO Chassis** (North America)   400606-B21

Factory Integrated Model ships with:

Two embedded NC373i Multifunction Gigabit Sever Adapters
Eight Hot Plug SAS Drive Bays
9 expansion slots - 7 PCI-Express x4 and 2 PCI-X 64-bit 133 MHz
Integrated Lights-Out 2 (iLO2)
800 Watt-CE Mark Compliant Hot Plug Power Supply
Three fans
Rack (5U)

                 HP ML370 G5 Tower SAS CTO Chassis (North America)   400607-B21

Factory Integrated Model ships with:

Two embedded NC373i Multifunction Gigabit Sever Adapters
Eight Hot Plug SAS Drive Bays
9 expansion slots - 7 PCI-Express x4 and 2 PCI-X 64-bit 133 MHz
Integrated Lights-Out 2 (iLO2)
800 Watt-CE Mark Compliant Hot Plug Power Supply
Three fans
Keyboard
2-button Mouse
Tower (5U)

Step 1A: Choose Controller (only one of the following)

Controller   Smart Array P400/256MB Controller   405132-B21
                 NOTE: PCI Express

                 HP Smart Array P400/512MB BBWC Controller   411064-B21
                 NOTE: PCI Express

                 HP Smart Array E200/64MB Controller   409180-B21
                 NOTE: PCI Express

                 HP Smart Array E200/128 BBWC Controller   411508-B21
                 NOTE: PCI Express

                 HP Smart Array P600/256 BBWC Controller   337972-B21
                 NOTE: PCI-X . SA-P600 has internal and external connectors.

                 HP Smart Array 6404/512 FIO CNTRLR   452240-B21

Configuration Information - Factory Integrated Models

Step 2: Choose Required Options (only one of the following from each list)

Processors	NOTE: If High Performance Model features are desired, 2nd processor is included in the Performance Pack part numbers in Step 3 below.	
	Quad-core Intel X5460 (3.16 GHz, 120 Watts, 1333 FSB) ML370 G5 FIO Kit	458408-L21
	Quad-core Intel X5450 (3.00 GHz, 120 Watts, 1333 FSB) ML370 G5 FIO Kit	462711-L21
	Quad-core Intel E5450 (3.00 GHz, 80 Watts, 1333 FSB) ML370 G5 FIO Kit	458410-L21
	Quad-core Intel E5440 (2.83 GHz, 80 Watts, 1333 FSB) ML370 G5 FIO Kit	458412-L21
	Quad-core Intel E5430 (2.66 GHz, 80 Watts, 1333 FSB) ML370 G5 FIO Kit	458414-L21
	Quad-core Intel E5420 (2.50 GHz, 80 Watts, 1333 FSB) ML370 G5 FIO Kit	458416-L21
	Quad-core Intel E5410 (2.33 GHz, 80 Watts, 1333 FSB) ML370 G5 FIO Kit	458418-L21
	Quad-core Intel E5405 (2.00 GHz, 80 Watts, 1333 FSB) ML370 G5 FIO Kit	458420-L21
	Quad-core Intel X5365 (3.00 GHz, 120 Watts, 1333 FSB) ML370 G5 FIO Kit	450321-L21
	Quad-core Intel X5355 (2.66 GHz, 120 Watts, 1333 FSB) ML370 G5 FIO Kit	433104-L21
	Quad-core Intel E5345 (2.33 GHz, 80 Watts, 1333 FSB) ML370 G5 FIO Kit	433102-L21
	Quad-core Intel E5335 (2.00 GHz, 80 Watts, 1333 FSB) ML370G5 FIO Kit	437391-L21
	Quad-core Intel E5320 (1.86 GHz, 80 Watts, 1066 FSB) ML370 G5 FIO Kit	433098-L21
	Quad-core Intel E5310 (1.60 GHz, 80 Watts, 1066 FSB) ML370 G5 FIO Kit	433100-L21
	Dual-core Intel X5160 (3.0 GHz, 80 Watts, 1333 FSB) ML370G5 FIO Kit	416198-L21
	Dual-core Intel X5150 (2.67 GHz, 65 Watts, 1333 FSB) ML370G5 FIO Kit	416196-L21
	Dual-core Intel X5140 (2.33 GHz, 65 Watts, 1333 FSB) ML370G5 FIO Kit	416194-L21
	Dual-core Intel X5130 (2.0 GHz, 65 Watts, 1333 FSB) ML370G5 FIO Kit	416192-L21
	Dual-core Intel X5120 (1.86 GHz, 65 Watts, 1066 FSB) ML370G5 FIO Kit	416190-L21
	Dual-core Intel X5110 (1.6 GHz, 65 Watts, 1066 FSB) ML370G5 FIO Kit	416188-L21
Base Memory	1 GB FBD PC2-5300 2 x 512 MB Kit	397409-B21
	2 GB FBD PC2-5300 2 x 1 GB Kit	397411-B21
	2 GB FBD PC2-5300 2 x 1 GB LP Kit	461826-B21
	4 GB FBD PC2-5300 2 x 2 GB Kit	397413-B21
	4 GB FBD PC2-5300 2 x 2 GB LP Kit	461828-B21
	8 GB FBD PC2-5300 2 x 4 GB Kit	397415-B21

Configuration Information - Factory Integrated Models

Step 3: Choose Additional Factory Integratable Options

Optical Drives	CD-RW/DVD-ROM Combo Drive Option Kit	331346-B21
	HP DVD±R/RW 16X Half Height	383974-B21
	DVD-ROM Drive Option Kit	217053-B21
	CD-ROM 48X FIO	367920-B21
Performance Packs	The HP ProLiant ML370 G5 Performance Packs are necessary to configure a HP ProLiant ML370 G5 High Performance Model which includes the latest performance technologies and enterprise class availability features pre-installed for convenience and value. The Performance Pack includes a 2nd processor, redundant fan, power supply, and memory expansion board. NOTE: Must also select 217503-B21 to achieve parity to ML370 G5 High Performance Models.	
	HP ML370G5 X5450 HPM FIO Perf Pack	460928-B21
	HP ML370G5 E5345 HPM FIO Perf Pack	436374-B21
	HP ML370G5 X5150 HPM FIO Perf Pack	430086-B21

Step 4: Choose Additional Options for Factory Integration

NOTE: For additional options, please refer to the "Options" section below.

Options

NOTE: Some options may not be factory configurable. Please contact your local sales representative for additional information.

HP ProLiant ML370 Unique Options	ML370 G5 SAS SFF 8-bay Drive Cage Kit NOTE: 2nd drive cage requires a storage controller.	401415-B21
	ML370 G5 Memory Board Kit NOTE: 2 Memory Boards required for support of 4:1 interleaving; 2 included with Performance models.	403766-B21
	Tower to Rack Conversion ML370 G5 Kit	400899-B21
	X4/X8 PCIE Bus Expander	403724-B21
	Hot Plug Redundant Fan ML370 G5 Kit	400693-B21

HP Insight Control and ProLiant Essentials Offerings	**ProLiant Essentials Value Pack** NOTE: Electronic licensing options are available for Insight Control suites and select ProLiant Essentials software products. Please see the appropriate Insight Control and ProLiant Essentials QuickSpecs for additional information.	
	Accelerated iSCSI Pack	
	ProLiant Essentials Accelerated iSCSI Pack, No Media, Single License NOTE: For use with a single NIC port. Contains one license with a unique license activation key and documentation. NOTE: For additional License Kits, please see the QuickSpecs at: http://h18000.www1.hp.com/products/quickspecs/12466_div/12466_div.html	452679-B21
	HP Insight Control Environment	
	HP Insight Control Environment, No Media 1-Server License including 1 year of 24x7 Technical Support and Updates NOTE: For additional License Kits, please see the QuickSpecs at: http://h18000.www1.hp.com/products/quickspecs/12631_div/12631_div.html	452148-B21
	ProLiant Essential RDMA Pack	
	HP ProLiant Essentials RDMA Pack for Embedded Multifunction Gigabit Server Adapters, No Media, 1-Server License NOTE: For additional License Kits, please see the QuickSpecs at: http://h18000.www1.hp.com/products/quickspecs/12573_div/12573_div.html	452681-B21
	Rapid Deployment Pack	
	ProLiant Essentials Rapid Deployment Pack No Media 1-Server License including 1 year of 24x7 Technical Support and Updates NOTE: This license allows 1 server to be deployed and managed via RDP. NOTE: For additional License Kits, please see the QuickSpecs at: http://h18000.www1.hp.com/products/quickspecs/11053_div/11053_div.html	452151-B21
	HP Server Migration Pack - Universal Edition	
	HP Server Migration Pack - Universal Edition, No Media, 1-Year Unlimited Migration License, including 1 year of 24x7 Technical Support and Updates NOTE: This license allows unlimited migrations (physical to ProLiant, physical to virtual, virtual to virtual, and virtual to ProLiant) for one year. Contains one license with a unique license activation key and documentation.	460756-B21
	HP Server Migration Pack - Universal Edition, No Media, Physical / Virtual to ProLiant Single Migration License, including 1 year of 24x7 Technical Support and Updates NOTE: This license allows 1 physical to ProLiant or virtual to ProLiant migration. Customer will receive a printed license entitlement certificate and documentation via	460750-B21

Options

physical shipment. The license entitlement certificate must be redeemed online or via fax in order to obtain the license activation key(s). Includes one year of 24 x 7 HP Software Technical Support and Update Service.

HP Server Migration Pack - Universal Edition, No Media, Physical / Virtual to Virtual Single Migration License, including 1 year of 24x7 Technical Support and Updates NOTE: This license allows 1 physical to virtual or virtual to virtual migration. Customer will receive a printed license entitlement certificate and documentation via physical shipment. The license entitlement certificate must be redeemed online or via fax in order to obtain the license activation key(s). Includes one year of 24 x 7 HP Software Technical Support and Update Service.	460753-B21

Remote Management
NOTE: Electronic licensing options are available for Insight Control suites and select ProLiant Essentials software products. Please see the appropriate Insight Control and ProLiant Essentials QuickSpecs for additional information.

Integrated Lights-Out Advanced Pack

Integrated Lights-Out Advanced Pack, No Media ,1 Server License NOTE: For additional License Kits, please see the QuickSpecs at: http://h18000.www1.hp.com/products/quickspecs/10861_div/10861_div.html	452141-B21

Integrated Lights-Out Select Pack

Integrated Lights-Out Select Pack, No Media, 1 Server License NOTE: For additional License Kits, please see the QuickSpecs at: http://h18000.www1.hp.com/products/quickspecs/10861_div/10861_div.html	452158-B21

Integrated Lights-Out Power Management Pack

HP iLO Power Management Pack, No Media, 1-Server License, including 1 year of 24x7 Technical Support and Updates NOTE: This option kit includes 1 license for iLO Advanced and Insight Power Manager. NOTE: For additional License Kits, please see the QuickSpecs at: http://h18000.www1.hp.com/products/quickspecs/12632_div/12632_div.html	452145-B21

Insight Power Manager

HP Insight Power Manager, No Media, 1-Server License, including 1 year of 24x7 Technical Support and Updates NOTE: This option kit includes 1 license for Insight Power Manager. NOTE: For additional License Kits, please see the QuickSpecs at: http://h18000.www1.hp.com/products/quickspecs/12623_div/12623_div.html	452677-B21

NOTE: Flexible and volume quantity license kits are available for ProLiant Essentials Value Packs. Refer to http://www.hp.com/servers/proliantessentials or the various ProLiant Essentials Value Pack product QuickSpecs for more information.
NOTE: For more information regarding ProLiant Essentials Software, please see the following URL: http://www.hp.com/servers/proliantessentials.

Options

Processor		
	Quad-core Intel Xeon Processor X5460 (3.16 GHz, 120 Watts, 1333 FSB)	458408-B21
	Quad-core Intel Xeon Processor X5450 (3.00 GHz, 120 Watts, 1333 FSB)	462711-B21
	Quad-core Intel Xeon Processor E5450 (3.00 GHz, 80 Watts, 1333 FSB)	458410-B21
	Quad-core Intel Xeon Processor E5440 (2.83 GHz, 80 Watts, 1333 FSB)	458412-B21
	Quad-core Intel Xeon Processor E5430 (2.66 GHz, 80 Watts, 1333 FSB)	458414-B21
	Quad-core Intel Xeon Processor E5420 (2.50 GHz, 80 Watts, 1333 FSB)	458416-B21
	Quad-core Intel Xeon Processor E5410 (2.33 GHz, 80 Watts, 1333 FSB)	458418-B21
	Quad-core Intel Xeon Processor E5405 (2.00 GHz, 80 Watts, 1333 FSB)	458420-B21
	Quad-Core Intel Xeon Processor X5365 (3.00 GHz, 120 Watts, 1333 FSB)	450321-B21
	Quad-Core Intel Xeon Processor X5355 (2.66 GHz, 120 Watts, 1333 FSB)	433104-B21
	Quad-Core Intel Xeon Processor E5345 (2.33 GHz, 80 Watts, 1333 FSB)	433102-B21
	Quad-Core Intel Xeon Processor E5335 (2.00 GHz, 80 Watts, 1333 FSB)	437391-B21
	Quad-Core Intel Xeon Processor E5320 (1.86 GHz, 80 Watts, 1066 FSB)	433098-B21
	Quad-Core Intel Xeon Processor E5310 (1.60 GHz, 80 Watts, 1066 FSB)	433100-B21
	Dual-Core Intel Xeon Processor 5160 (3.0 GHz, 80 Watts, 1333 FSB)	416198-B21
	Dual-Core Intel Xeon Processor 5150 (2.67 GHz, 65 Watts, 1333 FSB)	416196-B21
	Dual-Core Intel Xeon Processor 5140 (2.33 GHz, 65 Watts, 1333 FSB)	416194-B21
	Dual-Core Intel Xeon Processor 5130 (2.0 GHz, 65 Watts, 1333 FSB)	416192-B21
	Dual-Core Intel Xeon Processor 5120 (1.86 GHz, 65 Watts, 1066 FSB)	416190-B21
	Dual-Core Intel Xeon Processor 5110 (1.6 GHz, 65 Watts, 1066 FSB)	416188-B21
	Dual-Core Intel Xeon Processor 5080 (3.73 GHz, 130 Watts, 1066 FSB)	403768-B21
	Dual-Core Intel Xeon Processor 5060 (3.2 GHz, 130 Watts, 1066 FSB)	400500-B21
	Dual-Core Intel Xeon Processor 5050 (3.0 GHz, 95 Watts, 667 FSB)	400376-B21

Memory		
	1 GB FBD PC2-5300 2 x 512 MB Kit	397409-B21
	2 GB FBD PC2-5300 2 x 1 GB Kit	397411-B21
	2 GB FBD PC2-5300 2 x 1 GB LP Kit	461826-B21
	4 GB FBD PC2-5300 2 x 2 GB Kit	397413-B21
	4 GB FBD PC2-5300 2 x 2 GB LP Kit	461828-B21
	8 GB FBD PC2-5300 2 x 4 GB Kit	397415-B21
	ML370 G5 Memory Board Kit	403766-B21

NOTE: 2 Memory Board required for support of 4:1 interleaving; 2 boards included on Performance models.

Internal Storage		
	ML370 G5 SAS SFF 8-bay Drive Cage Kit	401415-B21

NOTE: Optional 2nd drive cage requires a dedicated storage controller.

Diskette Drive		
	Floppy Drive ML350/370 G5 Kit	409582-B21

Options

Optical Drives	CD-RW/DVD-ROM Combo Drive Option Kit	331346-B21
	HP DVD±R/RW 16X Half Height	383974-B21

Serial Port Kit	Parallel/Serial Port ML370/350 G5 Kit	401222-B21

Hard Drives	**Hot Plug SFF SAS 2.5" Drives**	
	HP 36GB 3G SAS 10K SFF SP HDD	375859-B21
	HP 36GB 3G SAS 15K SFF SP HDD	431933-B21
	HP 36GB 3G SAS 15K SFF DP HDD	418369-B21
	HP 72GB 3G SAS 10K SFF SP HDD	375861-B21
	HP 72GB 3G SAS 10K SFF DP HDD	384842-B21
	HP 72GB 3G SAS 15K SFF SP HDD	431935-B21
	HP 72GB 3G SAS 15K SFF DP HDD	418371-B21
	HP 146GB 3G SAS 10K SFF SP HDD	431958-B21
	HP 146GB 3G SAS 10K SFF DP HDD	418367-B21

NOTE: Please see the SAS Hard Drive QuickSpecs for Technical Specifications such as capacity, height, width, interface, transfer rate, seek time, physical configuration, and operating temperature:
http://h18000.www1.hp.com/products/quickspecs/12244_div/12244_div.html (Worldwide)

	SFF SATA Hot Plug Drives	
	HP 120GB 1.5G SATA 5.4K SFF HDD	431786-B21
	HP 60GB 1.5G SATA 5.4K SFF HDD	379306-B21

NOTE: SATA Drives have a 1-year warranty. Please see the SATA Hard Drive QuickSpecs for Technical Specifications such as capacity, height, width, interface, transfer rate, seek time, physical configuration, and operating temperature:
http://h18000.www1.hp.com/products/quickspecs/11940_div/11940_div.html (Worldwide)

Storage Controllers	**SAS Controllers**	
	Smart Array E200 Controller	
	HP Smart Array E200/64MB Controller	409180-B21
	HP Smart Array E200/128 BBWC Controller	411508-B21
	128-MB BBWC (Battery-Backed Write Cache) Enabler	351580-B21

NOTE: Supports the Smart Array E200 Controller, Smart Array 641 Controller, Smart Array 642 Controller.

	Smart Array E500 Controller	
	HP Smart Array E500/256MB Controller	435129-B21
	Smart Array P400 Controller	
	HP Smart Array P400/256MB Controller	405132-B21

NOTE: Supports RAID 0/1/5.

	HP Smart Array P400/512MB BBWC Controller	411064-B21

NOTE: Supports RAID 0/1/1+0/5/6.

Options

512MB Battery-backed cache upgrade	405148-B21
NOTE: Supports the Smart Array P400 Controller.	
Battery-backed write cache upgrade	383280-B21
NOTE: Supports the Smart Array P400 Controller.	

Smart Array P600 Controller

HP Smart Array P600/256 BBWC Controller	337972-B21
NOTE: Supports external drive attach.	

Smart Array P800 Controller

HP Smart Array P800/512 BBWC Controller	381513-B21

NOTE: Supports external drive attach.

NOTE: Please see the following QuickSpecs for Technical Specifications and additional information:
http://h18000.www1.hp.com/products/quickspecs/12460_div/12460_div.html
(Smart Array E200 Controller)
http://h18000.www1.hp.com/products/quickspecs/12700_div/12700_div.html
(Smart Array E500 Controller)
http://h18000.www1.hp.com/products/quickspecs/12400_div/12400_div.html
(Smart Array P400 Controller)
http://h18000.www1.hp.com/products/quickspecs/12247_div/12247_div.html
(Smart Array P600 Controller)
http://h18000.www1.hp.com/products/quickspecs/12616_div/12616_div.html
(Smart Array P800 Controller)

SAS HBA

HP 8 Internal Port SAS HBA with RAID	347786-B21

NOTE: Please see the HBA QuickSpecs for additional information:
http://h18004.www1.hp.com/products/quickspecs/12332_div/12332_div.html
(8 Internal Port SAS HBA)

SCSI Controllers for External Drive/Storage Support

Smart Array 6402/128 Controller	273915-B21
NOTE: Ultra320 SCSI.	
Smart Array 6404/256 Controller	273914-B21
NOTE: Ultra320 SCSI.	
Smart Array 642 Controller	291967-B21
NOTE: Ultra320 SCSI.	
128-MB BBWC (Battery-Backed Write Cache) Enabler	351580-B21
NOTE: Supports the Smart Array E200 Controller, Smart Array 641 Controller, Smart Array 642 Controller.	
256MB DDR, Battery-Backed Cache Upgrade Kit for SA-6400	273913-B21
NOTE: This 256MB DDR, Battery-Backed Cache upgrade kit supports the Smart Array 6400 series controller only.	
Ultra320 Expansion Module for SA-6402	273911-B21
64-Bit/133-MHz Single Channel Ultra320 SCSI HBA G2	374654-B21

SCSI HBA

HP SC11Xe Host Bus Adapter	412911-B21

NOTE: Please see the following QuickSpecs for Technical Specifications and additional information:
http://h18000.www1.hp.com/products/quickspecs/11943_div/11943_div.html

Options

(Single Channel Ultra320 SCSI HBA)
http://h18000.www1.hp.com/products/quickspecs/11587_div/11587_div.html
(Smart Array 6400 Series)
http://h18000.www1.hp.com/products/quickspecs/12069_div/12069_div.html
(Smart Array 642)
http://h18000.www1.hp.com/products/quickspecs/10429_div/10429_div.html
(SCSI Adapter)
http://h18000.www1.hp.com/products/quickspecs/12566_div/12566_div.html
(SC11Xe HBA)

Communications	HP NC110T PCI Express Gigabit Server Adapter	434905-B21
	HP NC360T PCI Express Dual Port Gigabit Server Adapter	412648-B21
	HP NC364T PCI Express Quad Port Gigabit Server Adapter	435508-B21
	NOTE: Does not support Windows 2000.	
	NOTE: There is a maximum of five NC364T PCI Express Quad Port Gigabit Server Adapter NICs allowed in this server.	
	HP NC373F PCI Express Multifunction Gigabit Server Adapter	394793-B21
	HP NC373T PCI Express Multifunction Gigabit Server Adapter	394791-B21
	HP NC380T PCI Express Dual Port Multifunction Gigabit Server Adapter	394795-B21
	HP NC510F PCIe 10 Gigabit Server Adapter	414126-B21
	NOTE: A minimum of 1 gigabyte (1 GB) of server memory is required per each NC510F adapter.	
	HP NC510C PCIe 10 Gigabit Server Adapter	414129-B21
	NOTE: A minimum of 1 gigabyte (1 GB) of server memory is required per each NC510C adapter.	
	HP NC7170 PCI-X Dual Port 1000T Gigabit Server Adapter	313881-B21
	HP NC7771 PCI-X 1000T Gigabit Server Adapter	290563-B21
Redundant Options	Redundant Power Supply 350/370/380 G5 AU Kit	399771-011
	Redundant Power Supply 350/370/380 G5 EU Kit	399771-021
	Redundant Power Supply 350/370/380 G5 JP Kit	399771-291
	Redundant Power Supply 350/370/380 G5 Worldwide Kit	399771-B21
	Redundant Power Supply 350/370/380 G5 UK Kit	399771-031
	Redundant Power Supply 350/370/380 G5 US Kit	399771-001
	Hot Plug Redundant Fan ML370 G5 Kit	400693-B21
Tape Drives	NOTE: For the complete listing of Tape Drive offerings, please see: http://www.hp.com/products1/storage/compatibility/tapebackup/ISS/index.html	
	USB Tape Drives	
	HP StorageWorks 1U USB Rack-Mount Kit with one DAT 160 USB drive	AG703A
	SAS Tape Drives NOTE: For the ML370 G5, HP recommends purchasing the HP SC44Ge HBA (416096-B21) for a dedicated SAS HBA for tape.	
	HP StorageWorks LTO-2 Ultrium 448 SAS Internal Tape Drive	DW085A

Options

HP StorageWorks LTO-3 Ultrium 920 SAS Internal Tape Drive	EH847A

NOTE: Please refer to the "Tape Drives, Tape Autoloaders & Tape Libraries" table in the Storage section of this document for a list of SAS controllers with tape support.

Ultrium Tape Drives

HP StorageWorks LTO-1 Ultrium 232 Internal Tape Drive (Carbonite)	DW064A
HP StorageWorks LTO-2 Ultrium 460 Internal Tape Drive (Carbon)	Q1518B
HP StorageWorks LTO-2 Ultrium 448 SCSI Internal Tape Drive (Carbonite)	DW016A
HP StorageWorks LTO-3 Ultrium 920 SCSI Internal Tape Drive	EH841A
HP StorageWorks LTO-3 Ultrium 960 Internal Tape Drive (Carbonite)	Q1538A
HP StorageWorks LTO-4 Ultrium 1840 SCSI Internal Tape Drive	EH853A

NOTE: Please see the HP StorageWorks LTO Ultrium Tape Drive QuickSpecs for additional options such as controllers, media, and other related items:
http://h18006.www1.hp.com/products/quickspecs/11739_div/11739_div.html (Worldwide)
http://h18006.www1.hp.com/products/quickspecs/12128_div/12128_div.html (Worldwide)

NOTE: For an up-to-date listing of the latest O/S and software support details for HP Ultrium tape drives, please visit: http://www.hp.com/go/connect

Rack-Mount Tape Drive Enclosures

HP StorageWorks 1U SCSI Rack-Mount kit	A7445B

NOTE: The 1U Rack-Mount Kit can support up to (2) half-height tape drives and is compatible with multiple Single-Ended and LVD SCSI tape drives including the DAT 40, DAT 72, DAT 160, DLT VS160, LTO-1 Ultrium 232, LTO-2 Ultrium 448 and LTO-3 Ultrium 920 tape drives.

HP StorageWorks 1U USB Rack-Mount Kit	A8007A

NOTE: The 1U USB Rack-Mount Kit can support up to (2) half-height tape drives and is compatible with the DAT 40 USB, DAT 72 USB and DAT 160 tape drives.

HP StorageWorks 1U SAS Rack-Mount Kit	AE459A

NOTE: The 1U SAS Rack-Mount Kit can support up to (2) half-height tape drives and is compatible with the LTO-2 Ultrium 448 SAS and LTO-3 Ultrium 920 SAS tape drives.

HP StorageWorks 3U Rack-mount kit	274338-B22

NOTE: The 3U Rack-mount Kit can support up to (2) full-height or (4) half-height tape drives and compatible with multiple LVD SCSI tape drives including DAT 40, DAT 72, DLT VS160, SDLT 600, LTO-1 Ultrium 232, LTO-2 Ultrium 460, LTO-2 Ultrium 448, LTO-3 Ultrium 920, LTO-3 Ultrium 960 and LTO-4 Ultrium 1840 tape drives.

NOTE: Please see the Rack-Mount Tape Drive Kits QuickSpecs for additional information regarding these kits:
http://h18000.www1.hp.com/products/quickspecs/10854_div/10854_div.html (Worldwide)

QuickSpecs

Options

HP D2D Backup System	HP StorageWorks D2D110 Backup System NOTE: 1TB of Disk Storage	EH880A
	HP StorageWorks D2D110 Backup System with Data Protector Express Software Kit NOTE: 1TB of Disk Storage	EH923A
	HP StorageWorks D2D120 Backup System NOTE: 2TB of Disk Storage	EH884A
	HP StorageWorks D2D120 Backup System with Data Protector Express Software Kit NOTE: 2TB of Disk Storage	EH924A
	NOTE: Please see the HP D2D Backup Systems QuickSpecs for additional information: http://h18000.www1.hp.com/products/quickspecs/12651_div/12651_div.html (Worldwide)	

Tape Autoloaders	**HP StorageWorks DAT Autoloader**	
	HP StorageWorks DAT 72x10 tape autoloader	AE313B
	HP StorageWorks 1/8 Tape Autoloader	
	HP StorageWorks 1/8 Ultrium 960 Tape Autoloader	AF204A
	HP StorageWorks 1/8 Ultrium 920 G2 Tape Autoloader	AH165A
	HP StorageWorks 1/8 Ultrium 448 G2 Tape Autoloader	AH164A
	HP StorageWorks 1/8 Ultrium 232 G2 Tape Autoloader	AH163A
	HP StorageWorks 1/8 G2 Tape Autoloader Rack Kit NOTE: Required to install the 1/8 G2 Autoloaders in a standard 19-inch rack; includes rails and rackmount instructions	AH166A
	NOTE: Please reference the Tape Autoloader QuickSpecs at http://www.hp.com/go/automation for additional information needed to create a complete solution; reference current compatibility information at http://www.hp.com/go/ebs	

Tape Libraries	**HP StorageWorks MSL2024 Tape Library**	
	HP StorageWorks MSL2024 1 LTO-4 Ultrium 1840 SCSI Drive Library	AJ033A
	HP StorageWorks MSL2024 1 LTO-4 Ultrium 1840 4GB FC Library	AJ034A
	HP StorageWorks MSL2024 1 LTO-3 Ultrium 960 SCSI Drive Library	AG115A
	HP StorageWorks MSL2024 1 LTO-3 Ultrium 960 4GB FC Library	AG326B
	HP StorageWorks MSL2024 1 LTO-3 Ultrium 920 SAS Drive Library	AH559A
	HP StorageWorks MSL2024 1 LTO-3 Ultrium 920 SCSI Drive Library	AH169A
	HP StorageWorks MSL2024 1 LTO-2 Ultrium 448 SCSI Drive Library	AG116A
	HP StorageWorks MSL4048 Tape Library	
	HP StorageWorks MSL4048 1 Ultrium 448 SCSI Drive Library	AG320A
	HP StorageWorks MSL4048 1 Ultrium 920 SAS Drive Library	AH560A
	HP StorageWorks MSL4048 1 Ultrium 920 SCSI Drive Library	AH171A
	HP StorageWorks MSL4048 1 Ultrium 960 SCSI Drive Library	AG322A
	HP StorageWorks MSL4048 1 Ultrium 960 4GB FC Library	AG324B
	HP StorageWorks MSL4048 1 LTO-4 Ultrium 1840 SCSI Drive Library	AJ035A
	HP StorageWorks MSL4048 1 LTO-4 Ultrium 1840 4GB FC Library	AJ036A
	HP StorageWorks MSL8096 Tape Library	

Options

HP StorageWorks MSL8096 2 Ultrium 920 SAS Drive Library	AH561A
HP StorageWorks MSL8096 2 Ultrium 960 4GB FC Library	AH218A
HP StorageWorks MSL8096 2 Ultrium 960 SCSI Drive Library	AH219A
HP StorageWorks MSL8096 2 LTO-4 Ultrium 1840 SCSI Drive Library	AJ039A
HP StorageWorks MSL8096 2 LTO-4 Ultrium 1840 4GB FC Library	AJ040A
HP StorageWorks MSL6000 Tape Library	
LTO-4 Ultrium 1840 technology	
HP StorageWorks MSL6030 1 LTO-4 Ultrium 1840 SCSI Drive Library	AJ029A
HP StorageWorks MSL6030 1 LTO-4 Ultrium 1840 4GB FC Library	AJ030A
HP StorageWorks MSL6060 2 LTO-4 Ultrium 1840 SCSI Drive Library	AJ031A
HP StorageWorks MSL6060 2 LTO-4 Ultrium 1840 4GB FC Library	AJ032A
LTO-3 Ultrium 960 technology	
HP StorageWorks MSL6030 1 Ultrium 960 Dr LVDS Library	AD606B
HP StorageWorks MSL6030 1 Ultrium 960 Dr FC Library	AD608B
HP StorageWorks MSL6030 2 Ultrium 960 Dr LVDS Library	AD607B
HP StorageWorks MSL6030 2 Ultrium 960 Dr FC Library	AD609B

Cluster Options	ProLiant Cluster Starter Kit	364023-B22
	NOTE: For additional information regarding the ProLiant Cluster Starter Kit please see the following QuickSpecs at: http://h18000.www1.hp.com/products/quickspecs/11935_div/11935_div.html (Worldwide)	
	HP HA/F200 for Entry SAN Cluster	364026-B22
	NOTE: For additional information regarding the ProLiant Cluster for Entry Level SAN please see the following QuickSpecs at: http://h18000.www1.hp.com/products/quickspecs/11932_div/11932_div.html (Worldwide)	
	NOTE: For configuration/certification options for the HP Parallel Database Cluster for Oracle RAC please go to: http://www.hp.com/solutions/highavailability/oracle	
	HP Serviceguard for Linux ProLiant Cluster A.11.16 for SUSE SLES 9 & 10 and Red Hat EL 3 & 4 (2 node license cluster kit)	305199-B26
	HP Serviceguard for Linux ProLiant Cluster, A.11.18 (2 license version - Red Hat EL 4&5, SUSE SLES10)	305199-B27
	HP Serviceguard for Linux A.11.16 for SUSE SLES 9 & 10 and Red Hat EL 3 & 4 (single license version)	307754-B26
	HP Serviceguard for Linux, A.11.18 (single license version - Red Hat EL 4&5, SUSE SLES10)	307754-B27
	HP Serviceguard for Linux and Red Hat Global File System - 1 year subscription	T2798AA#001
	HP Serviceguard for Linux and Red Hat Global File System - 3 years subscription	T2798AA#003
	NOTE: For additional information regarding the HP Serviceguard for Linux License, please see the following QuickSpecs at: http://h18000.www1.hp.com/products/quickspecs/11518_div/11518_div.html (Worldwide) NOTE: For configuration/certification options for HP Serviceguard for Linux please go to: http://www.hp.com/info/sglx	

Options

StorageWorks Options	NOTE: The following is a list of all Fibre Channel Host Bus Adapters for Windows and Linux. For detailed compatibility information please see: http://h18006.www1.hp.com/storage/saninfrastructure/hba.html	
	HP StorageWorks FC2142SR 4Gb PCI-e HBA	A8002A
	HP StorageWorks FC2242SR Dual Channel 4 Gb PCI-e HBA	A8003A
	HP StorageWorks FC1142SR 4Gb PCI-e HBA	AE311A
	HP StorageWorks FC1242SR Dual Channel 4 Gb PCI-e HBA	AE312A
	HP StorageWorks FC2143 4Gb PCI-X 2.0 -to-Fibre Channel HBA	AD167A
	HP StorageWorks FC2243 Dual Channel 4Gb PCI-X 2.0 HBA	AD168A
	HP StorageWorks FC1143 4Gb PCI-X 2.0 HBA	AB429A
	HP StorageWorks FC1243 Dual Channel 4Gb PCI-X 2.0 HBA	AE369A

HP StorageWorks Modular Smart Array 20	HP StorageWorks Modular Smart Array 20	335921-B21
	NOTE: Rack-mountable 12 (SATA) drive enclosure with U320 Host connectivity, redundant power supplies.	
	NOTE: The Modular Smart Array Enclosure 20 Family supports the SATA 1.5Gb/s 3.5" Hot Plug Hard Drives.	

HP StorageWorks Modular Smart Array 30	HP StorageWorks Modular Smart Array 30 SB	302969-B21
	NOTE: Rack-mountable 14 drive enclosure with single bus, redundant power supplies.	
	HP StorageWorks Modular Smart Array 30 DB	302970-B21
	NOTE: Rack-mountable 14 drive enclosure with dual bus, redundant power supplies.	
	NOTE: The Modular Smart Array Enclosure 30 Family supports the Wide Ultra3, Ultra320 Hot Plug Hard Drives.	

HP StorageWorks Modular Smart Array 50	HP StorageWorks Modular Smart Array 50 Enclosure	364430-B21
	NOTE: Please see the Modular Smart Array 50 QuickSpecs for additional options and configuration information at http://h18000.www1.hp.com/products/quickspecs/12245_div/12245_div.html (Worldwide)	

HP StorageWorks Modular Smart Array 500	HP StorageWorks Modular Smart Array 500 Generation 2	335880-B21
	NOTE: Please see the Modular Smart Array 500 Generation 2 QuickSpecs for additional information including configuration steps and additional options needed for a complete solution at: http://h18000.www1.hp.com/products/quickspecs/11956_div/11956_div.html (Worldwide)	

Options

HP StorageWorks Modular Smart Array 1000	HP StorageWorks Modular Smart Array 1000	201723-B22
	NOTE: Please see the Modular Smart Array 1000 QuickSpecs for additional options and configuration information at http://h18000.www1.hp.com/products/quickspecs/11033_div/11033_div.html (Worldwide)	
HP StorageWorks Modular Smart Array 1500 cs	Modular Smart Array 1500 Controller Shelf	AA986A
	NOTE: Please see the StorageWorks Modular SAN Array 1500 cs QuickSpecs for additional options and configuration information at: http://www.hp.com/go/MSA1500cs	
Uninterruptible Power Systems - Rack Mountable	HP, R1.5kVA UPS, 1U, NA	AF419A
	HP, R1.5kVA UPS, 1U, INTL	AF418A
	HP, R1.5kVA UPS, 1U, JPN/TW	AF421A
	HP R3000 VA UPS, 2U, DTC, INTL	AF414A
	HP R3000 VA UPS, 2U, L5-30, NA	AF422A
	HP R3000 VA UPS, 2U, L6-20, NA	AF423A
	HP R3000 VA UPS, 2U, L6-20, JPN	AF424A
	HP R3000 VA UPS, 2U, L5-30, JPN	AF425A
	HP R5500 VA UPS, INTL	AF416A
	HP R5500 VA UPS, NA/JPN	AF426A
HP Monitored Power Distribution Unit (PDU)	HP Monitored Power Distribution Unit: Full Rack Version	
	17.3 kVA Monitored PDU Model S2324	AF503A
	8.6 kVA Monitored PDU Model S1324	AF504A
	16.6 kVA Monitored PDU Model S2140	AF505A
	8.3 kVA Monitored PDU Model S1140	AF506A
	22 kVA Monitored PDU Model S2316	AF507A
	11 kVA Monitored PDU Model S1316	AF508A
	14.7 kVA Monitored PDU Model S2132	AF509A
	7.3 kVA Monitored PDU Model S1132	AF510A
	4.9kVA Monitored PDU model S124	AF914A
	7.3kVA Monitored PDU model S132	AF915A

Options

Modular Power Distribution Units 1U/0U (up to 32 outlets) **NOTE:** 1U/0U mounting brackets shipped with the unit (optimized for 10000 and 9000 series racks).	Fixed Cord Extension Bars **NOTE:** Two extension bar sticks; each with (7) C13 plugs.	351655-B21
	Fixed Cord PDU (NA/JPN) **NOTE:** Four Fixed Cord Extension Bars, and one 24A, HV mPDU L6-30P core.	351655-D72
	Fixed Cord PDU (INTL) **NOTE:** Four Fixed Cord Extension Bars, and one 32A, HV mPDU IEC-309 core.	351655-B31
	HP Modular Power Distribution Units (mPDU), Low Volt Model, 24A (100-127 VAC) (NA, Japan) **NOTE:** This mPDU (252663-D71) may also be used to connect the low volt model of the UPS R3000 XR.	252663-D71
	HP Modular Power Distribution Units (mPDU), High Volt Model, 24A (200-240 VAC) (NA, Japan)	252663-D72
	HP Modular Power Distribution Units (mPDU), High Volt Model, 32A (200-240 VAC) (Int'l)	252663-B31
	HP Modular Power Distribution Units (mPDU), High Volt Model, 40A (200-240 VAC) (WW) **NOTE:** This mPDU (252663-B21), 40A model has a hardwired input.	252663-B21
	HP Modular Power Distribution Units (mPDU), High Volt Model, 16A (200-240 VAC) (WW)	252663-B24
	HP Modular Power Distribution Units (mPDU), High Volt Model, 40A, Attached Cord (NA/JPN)	252663-D73
	HP Modular Power Distribution Units (mPDU), High Volt Model, 40A, Attached Cord (Int'l)	252663-B32
	NOTE: This PDU has a detachable input power cord and allows for adaptability to country specific power requirements. This model may also be used with the high volt UPSs R3000 XR and R6000 For North America, need to order cable PN 340653-001.	
	NOTE: Please see the following Modular Power Distribution Unit (Zero-U/1U Modular PDUs) QuickSpecs for additional options including shorter jumper cables and country specific power cords: http://h18000.www1.hp.com/products/quickspecs/11041_div/11041_div.html (Worldwide)	

USB Options	HP USB 2-Button Optical Scroll Mouse (Carbonite/Silver)	DC172B
	1.44MB External USB Floppy Drive	DC141B
	HP USB 04 Standard Keyboard	DT528A#ABA
	HP 1GB USB 2.0 Floppy Drive Key	442085-B21
	HP 256MB USB 2.0 Floppy Drive Key	442084-B21

Options

HP Rack 5000 Series (Graphite Metallic)	HP 5642 Rack-Unassembled	358254-B21

NOTE: Please see the HP Rack 5642 QuickSpecs for additional part numbers and Technical Specifications such as height, width, depth, weight, and color: http://h18000.www1.hp.com/products/quickspecs/12074_div/12074_div.html (Worldwide)

NOTE: For additional information regarding Rack Cabinets, please see the following URL: http://www.hp.com/go/rackandpower.

HP Rack 10000 G2 Series (Carbon/Graphite Metallic)	10642 G2 (42U) Rack Cabinet - Pallet	AF001A
	10642 G2 (42U) Rack Cabinet - Shock Pallet	AF002A
	10642 G2 (42U) Rack Cabinet - Crated	AF003A
	10642 G2 (42U) Rack Cabinet, with Extension - Shock Pallet	AF004A
	10636 G2 (36U) Rack Cabinet - Pallet	AF011A
	10636 G2 (36U) Rack Cabinet - Shock Pallet	AF012A
	10636 G2 (36U) Rack Cabinet - Crated	AF013A
	10636 G2 (36U) Rack Cabinet, with Extension - Shock Pallet	AF014A
	10622 G2 (22U) Rack Cabinet - Pallet	AF021A
	10622 G2 (22U) Rack Cabinet - Shock Pallet	AF022A
	10842 G2 (42U) 800mm Wide Rack Cabinet - Pallet	AF041A
	10842 G2 (42U) 800mm Wide Rack Cabinet - Shock Pallet	AF042A
	10647 G2 (47U) Rack Cabinet - Pallet	AF031A

NOTE: It is mandatory to use a shock pallet when shipping racks with equipment installed.

NOTE: Please see the Rack 10000 G2 QuickSpecs for Technical Specifications such as height, width, depth, weight, and color: http://h18000.www1.hp.com/products/quickspecs/12402_div/12402_div.html (Worldwide)

NOTE: For additional information regarding Rack Cabinets, please see the following URL: http://www.hp.com/go/rackandpower.

HP Rack 10000 Series (Graphite Metallic)	HP S10614 (14U) Rack Cabinet - Shock Pallet	292302-B22

NOTE: xxxxxx-B22 (shock pallet) used to ship racks with equipment installed (by custom systems, VARs and Channels).

NOTE: It is mandatory to use a shock pallet in order to ship racks with equipment installed. Not all HP equipment is qualified to be shipped in the Rack 10000 series.

NOTE: Please see the Rack 10000 QuickSpecs for Technical Specifications such as height, width, depth, weight, and color: http://h18000.www1.hp.com/products/quickspecs/10995_div/10995_div.html (Worldwide)

NOTE: For additional information regarding Rack Cabinets, please see the following URL: http://www.hp.com/go/rackandpower.

Options

Keyboards and Monitors

TFT7210R Rack Mounted 17" Monitor	348373-B21
TFT7600 Rackmount Keyboard Monitor US	AG052A
TFT7600 Rackmount Keyboard Monitor UK	AG053A
TFT7600 Rackmount Keyboard Monitor GR	AG054A
TFT7600 Rackmount Keyboard Monitor FR	AG055A
TFT7600 Rackmount Keyboard Monitor IT	AG056A
TFT7600 Rackmount Keyboard Monitor SP	AG057A
TFT7600 Rackmount Keyboard Monitor DEN	AG058A
TFT7600 Rackmount Keyboard Monitor NOR	AG059A
TFT7600 Rackmount Keyboard Monitor SE/FI	AG060A
TFT7600 Rackmount Keyboard Monitor SWI	AG061A
TFT7600 Rackmount Keyboard Monitor PORT	AG062A
TFT7600 Rackmount Keyboard Monitor BEL	AG063A
TFT7600 Rackmount Keyboard Monitor JPN2	AG064A
TFT7600 Rackmount Keyboard Monitor RUS	AG065A
TFT7600 Rackmount Keyboard Monitor INTL	AG066A
1U Rackmount Keyboard with USB, US	AG072A
1U Rackmount Keyboard with USB, UK	AG073A
1U Rackmount Keyboard with USB, GR	AG074A
1U Rackmount Keyboard with USB, FR	AG075A
1U Rackmount Keyboard with USB, ITL	AG076A
1U Rackmount Keyboard with USB, SP	AG077A
1U Rackmount Keyboard with USB, DEN	AG078A
1U Rackmount Keyboard with USB, NOR	AG079A
1U Rackmount Keyboard with USB, SE/FI	AG080A
1U Rackmount Keyboard with USB, SWI	AG081A
1U Rackmount Keyboard with USB, PORT	AG082A
1U Rackmount Keyboard with USB, BEL	AG083A
1U Rackmount Keyboard with USB, JPN2	AG084A
1U Rackmount Keyboard with USB, RUS	AG085A
1U Rackmount Keyboard with USB, INTL	AG086A

NOTE: For additional information regarding Rack Cabinets, please see the following URL: http://www.hp.com/go/rackandpower.

QuickSpecs

Options

HP KVM Switch Options	2x1x16 IP Console Switch with Virtual Media	AF601A
	4x1x16 IP Console Switch with Virtual Media	AF602A
	2x16 Server Console Switch with Virtual Media	AF600A
	PS/2 Virtual Media Interface Adapter, 1 pack	AF604A

NOTE: Requires PS/2 and one USB port on server.

	Server Console Switch (KVM), 0 x 1 x 8 port	336044-B21
	Server Console Switch (KVM), 0 x 2 x 16 port	336045-B21
	PS/2 Interface Adapter, 1 pack	262588-B21
	PS/2 Interface Adapter, 8 pack	262587-B21
	USB Interface Adapter, 1 pack	336047-B21
	Serial Interface adapter - 1 Pack with power supply	373035-B21

NOTE: Cat5e cables are required to connect Interface Adapters to Console Switches. Cat5e cables can be found at the following URL: http://www.hp.com/go/kvm.

	HP 1x4 Console Switch	AF611A
	PS2 Server Console Cable, 6 ft, 2 pack	AF612A
	USB Server Console Cable, 6 ft, 2 pack	AF613A

NOTE: For additional information regarding KVM switches, Serial Console servers, rack mount monitors, keyboards and all related options please see the following URL: http://www.hp.com/go/kvm.

HP Serial Console Server Options	HP 16 Port Serial Console Server (worldwide)	AF101A
	HP 48 Port Serial Console Server (worldwide)	AF102A
	Serial Adapter, RJ45-DB9 DCE Female, 1 Pack	AF103A
	Serial Adapter, RJ45-DB9 DCE Female, 8 Pack	AF110A

NOTE: Cat5e cables are required to connect Serial Adapters to Serial Console Servers. Additional Serial Adapters and Cat5e cables can be found at the following URL: http://www.hp.com/go/kvm.

NOTE: For additional information regarding KVM switches, Serial Console servers, rack mount monitors, keyboards and all related options please see the following URL: http://www.hp.com/go/kvm.

QuickSpecs

Options

Service and Support Offerings (HP Care Pack Services)

Hardware Services On-site Service

4-Hour On-site Service, 5-Day x 13-Hour Coverage, 3 Years, Electronic	U4528E
4-Hour On-site Service, 7-Day x 24-Hour Coverage, 3 Years, Electronic	U4529E

Hardware Services 6-Hour Call to Repair On-site Service

6-Hour Call to Repair, On-site Service, 7-Day x 24-Hour Coverage, 3 Years, Electronic	U4530E

Installation & Start-up Services

Hardware Installation, Electronic	U4538E
Installation & Start-Up of a ProLiant server and Microsoft or Linux O/S per the Customer Description and/or Data Sheet. To be delivered on a scheduled basis 8am-5pm, M-F, excl. HP holidays, Electronic	U4539E

Support Plus

Onsite HW support, 8am-9pm, M-F, 4hr response and Microsoft O/S SW Tech support offsite, onsite at HP's discretion, 8am-9pm, M-F 2hr response time excl. HP holidays, Electronic	U4540E

Support Plus 24

Onsite HW support 24x7, 4hr response and Microsoft O/S SW Tech support offsite, onsite at HP's discretion, 24x7 2hr response time incl. HP holidays, Electronic	U4541E
Onsite HW support 24x7, 4hr response and SuSE Linux SW Tech support offsite, onsite at HP's discretion, 24x7 2hr response time incl. HP holidays, Electronic	U6311E
Onsite HW support 24x7, 4hr response and Red Hat ES Linux SW Tech support offsite, onsite at HP's discretion, 24x7 2hr response time incl. HP holidays, Electronic	U8333E

NOTE: For more information, customer/resellers can contact http://www.hp.com/services/carepack.

Memory

NOTE: Memory configurations listed do not apply to "Factory Integrated Models".
NOTE: Memory DIMMs in systems with the Front Side Bus (FSB) running at 1333 MHz will run at 667 MHz and in systems with a FSB running at 1066 MHz or 667 MHz the memory DIMMs will run at 533 MHz.

HP ProLiant ML370 G5 Models

Minimum Memory
1 GB PC2-5300 Fully Buffered DIMMs (DDR2-667) running at 533 MHz (2 x 512 MB)

Maximum Memory Replaced with Optional Memory
Up to 64 GB of memory is available with the removal of the standard 1 GB of memory. With 2 memory cards: 4 GB PC2-5300 Fully Buffered DIMMs (DDR2-667) running at 533 MHz (16 x 4 GB with 2 memory cards).

NOTE: Not all FB DIMM sizes available at product launch.
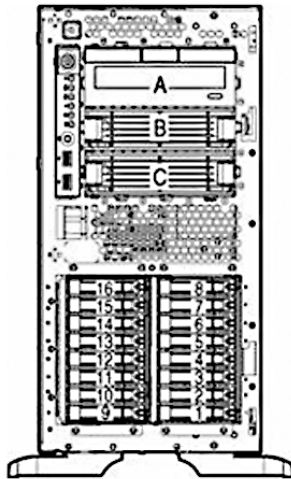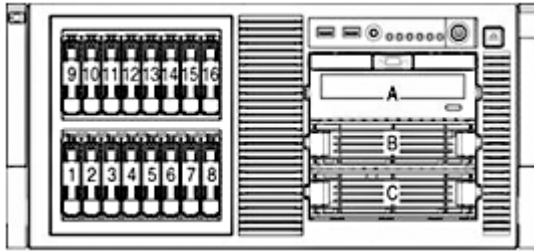NOTE: This chart does not represent all possible memory configurations.
NOTE: Memory DIMMs in systems with the Front Side Bus (FSB) running at 1333 MHz will run at 667 MHz and in systems with a FSB running at 1066 MHz or 667 MHz the memory DIMMs will run at 533 MHz.

Memory			Slot							
			1	2	3	4	5	6	7	8
Standard	1 GB		512 MB	Empty	Empty	Empty	512 MB	Empty	Empty	Empty
Maximum	64 GB	1st card	4 GB	4 GB	4 GB	4 GB	4 GB	4 GB	4 GB	4 GB
		2nd card	4 GB	4 GB	4 GB	4 GB	4 GB	4 GB	4 GB	4 GB

Following are memory options available from HP:
- 1 GB FBD PC2-5300 2 x 512 MB Kit   397409-B21
- 2 GB FBD PC2-5300 2 x 1 GB Kit   397411-B21
- 2 GB FBD PC2-5300 2 x 1 GB LP Kit   461826-B21
- 4 GB FBD PC2-5300 2 x 2 GB Kit   397413-B21
- 4 GB FBD PC2-5300 2 x 2 GB LP Kit   461828-B21
- 8 GB FBD PC2-5300 2 x 4 GB Kit   397415-B21

Storage

	A	DVD-ROM Drive (Performance Models)/48x IDE CD-ROM Drive (Base and Entry Models)
	B, C	DVD-ROM Drive (Performance Models)/48x IDE CD-ROM Drive (Base and Entry Models)
	1-16	(16) hot-plug Serial-attached SCSI (SAS) drives supported
	A	DVD-ROM Drive (Performance Models)/48x IDE CD-ROM Drive (Base and Entry Models)
	B, C	DVD-ROM Drive (Performance Models)/48x IDE CD-ROM Drive (Base and Entry Models)
	1-16	(16) hot-plug Serial-attached SCSI (SAS) drives supported

Drive Support

	Quantity Supported	Position Supported	Controller
Removable Media			
IDE CD-ROM Drive	Up to 2	A, B	Integrated IDE
DVD-ROM Drive Option Kit (optional)	Up to 2	A, B	Integrated IDE

Storage

Hard Drives
SFF SATA Hot Plug Drives

	Quantity Supported	Position Supported	Controller
120GB 1.5G SATA 5.4K 60GB 1.5G SATA 5.4K	Up to 16	1-16	HP Smart Array E200/64MB Controller HP Smart Array E200/128 BBWC Controller HP Smart Array E500/256MB Controller HP Smart Array P400/256MB Controller HP Smart Array P400/512MB BBWC Controller HP Smart Array P600/256 BBWC Controller HP Smart Array P800/512 BBWC Controller

Hot Plug SFF SAS 2.5" Drives

	Quantity Supported	Position Supported	Controller
146GB 3G SAS 10K SP 146GB 3G SAS 10K DP 72GB 3G SAS 10K SP 72GB 3G SAS 10K DP 72GB 3G SAS 15K SP 72GB 3G SAS 15K DP 36GB 3G SAS 10K SP 36GB 3G SAS 15K SP 36GB 3G SAS 15K DP	Up to 16	1-16	HP Smart Array E200/64MB Controller HP Smart Array E200/128 BBWC Controller HP Smart Array E500/256MB Controller HP Smart Array P400/256MB Controller HP Smart Array P400/512MB BBWC Controller HP Smart Array P600/256 BBWC Controller HP Smart Array P800/512 BBWC Controller

External Storage

	Quantity Supported	Position Supported	Host Controller or Adapter
Modular Smart Array 20 Family	1 per external VHDCI SCSI connector	External	Smart Array 6402/128 Controller Smart Array 6404/256 Controller
Modular Smart Array 30 Family	1 per external VHDCI SCSI connector	External	Smart Array 6402/128 Controller Smart Array 6404/256 Controller Smart Array 642 Controller 64-Bit/133-MHz Dual Channel Ultra320 SCSI Adapter
Modular Smart Array 50 Enclosure	1 per external VHDCI SCSI connector	External	HP Smart Array P600/256 BBWC Controller
Modular Smart Array 500 G2 System	1	External	Smart Array 642 Controller (used as Host Bus Adapter) Please see the Modular Smart Array 500 G2 QuickSpecs for the latest list of supported HBAs: http://www.hp.com/go/msa500
Modular Smart Array 1500 cs or 1000	Please see the Modular Smart Array 1500 cs or Modular Smart Array 1000 QuickSpecs links	External	Please see the Modular Smart Array 1000 QuickSpecs for the latest list of supported HBAs: http://www.hp.com/go/MSA1000 Please see the Modular Smart Array 1500 cs QuickSpecs for the latest list of supported HBAs: http://www.hp.com/go/MSA1500cs

Storage

to determine
configuration
requirements

Tape Drives, Tape Autoloaders, Tape Libraries & D2D Backup

NOTE: For an up-to-date listing of the latest O/S Support details for each of the Tape Drives listed below, please see the following:
http://h18000.www1.hp.com/products/quickspecs/division/10233.html (Worldwide)

NOTE: For an up-to-date listing of the latest O/S Support details for each of the Tape Autoloaders and Tape Libraries listed below, please see the following:
http://h18000.www1.hp.com/products/quickspecs/division/10809.html (Worldwide)

NOTE: For complete listing of tape drive offerings see
http://www.hp.com/products1/storage/compatibility/tapebackup/ISS/index.html

NOTE: SAS Tape Drives: Connecting hard drive cage and SAS tape to the same SAS Controller using split cable (supplied with tape drive) deactivates 1 of the hard drive bays. Actual hard drive bay deactivated depends on where split cable plugs into SAS drive connector. Example: 3x SAS cable connector plugged into SAS drive connector (5-8) on the back of the hard drive cage would mean drive bay 8 is deactivated.

	Position Supported	Controller	Controller/HBA Option Kit Part Number
HP StorageWorks SCSI Tape Drives, Internal LTO-1 Ultrium 232 LTO-2 Ultrium 448 LTO-2 Ultrium 460 LTO-3 Ultrium 920 LTO-3 Ultrium 960 LTO-4 Ultrium 1840 DAT 40 DAT 72 DAT 160 DLT VS160 SDLT 600	Internal	64-Bit/133-MHz Single Channel Ultra320 SCSI HBA G2	374654-B21
HP StorageWorks SCSI Tape Drives, External LTO-1 Ultrium 232 LTO-2 Ultrium 448 LTO-2 Ultrium 460 LTO-3 Ultrium 920 LTO-3 Ultrium 960 LTO-4 Ultrium 1840 DAT 40 DAT 72 DAT 160 DLT VS160 SDLT 600 1U Rack-Mount Kit	External	64-Bit/133-MHz Single Channel Ultra320 SCSI HBA G2	374654-B21

Storage

3U Rack-Mount Kit

HP StorageWorks USB Tape Drives, Internal DAT 40 USB DAT 72 USB DAT 160 USB	Internal	USB 2.0 Port on motherboard	N/A
HP StorageWorks USB Tape Drives, External DAT 40 USB DAT 72 USB DAT 160 USB 1U USB Rack-Mount Kit	External	USB 2.0 Port	N/A
HP StorageWorks SAS Tape Drives, Internal LTO-2 Ultrium 448 SAS LTO-3 Ultrium 920 SAS	Internal	HP SC44Ge Host Bus Adapter NOTE: Recommended.	416096-B21
		HP Smart Array E500 Controller	435129-B21
		NOTE: The following SAS Smart Array controllers require ROM Flash version 2.04 or higher for SAS tape support:	
		HP Smart Array P400/256MB Controller	405132-B21
		HP Smart Array P400/512MB Controller	411064-B21
		NOTE: Please visit http://www.hp.com/go/connect for details about minimum SAS controller firmware version and SAS cabling requirements.	
HP StorageWorks SAS Tape Drives, External LTO-2 Ultrium 448 SAS LTO-3 Ultrium 920 SAS 1U Rack-Mount Kit	External	HP SC44Ge Host Bus Adapter NOTE: Recommended	416096-B21
		HP Smart Array E500 Controller	435129-B21
		NOTE: The following SAS Smart Array controllers require ROM Flash version 2.04 or higher for SAS tape support:	
		HP Smart Array P400/256MB Controller	405132-B21
		HP Smart Array P400/512MB Controller	411064-B21
		NOTE: Please visit http://www.hp.com/go/connect for details about minimum SAS controller firmware version and SAS cabling requirements.	
HP StorageWorks SCSI Tape Automation, External DAT 72x10 Autoloader 1/8 Tape Autoloader MSL2024 MSL4048 MSL8096 MSL6000	External	64-Bit/133-MHz Single Channel Ultra320 SCSI HBA G2	374654-B21

Storage

HP StorageWorks SAS Tape Automation, External 1/8 G2 Autoloader MSL2024 MSL4048 MSL8096	External	HP SC44Ge Host Bus Adapter **NOTE:** Please visit http://www.hp.com/go/connect for details about minimum SAS controller firmware version and SAS cabling requirements.	416096-B21
HP StorageWorks Fibre Tape Automation, External MSL2024 MSL4048 MSL6000	External	**NOTE:** Please consult the EBS connectivity matrix at http://www.hp.com/go/ebs for detailed connectivity information.	N/A
HP StorageWorks D2D Backup Systems D2D110 D2D120	External	Embedded Network Controller	N/A

QuickSpecs

Power Specifications

Part Number	380622-001
Spare Kit	403781-001
Operational Input Voltage Range (V rms)	90 to 264
Frequency Range (Nominal) (Hz)	47 to 63 (50/60)

Nominal Input Voltage (Vrms)	100	120	208	220	230	240
Max Rated Output Wattage Rating	800	950	1000	1000	1000	1000
Nominal Input Current (A rms)	10.0	8.8	5.85	5.5	5.2	4.97
Max Rated Input Wattage Rating (Watts)	980	1035	1193	1186	1172	1169
Max. Rated VA (Volt-Amp)	1000	1056	1217	1210	1196	1193
Efficiency (%)	81.5	82	84	84	85	85.5
Power Factor	0.98	0.98	0.98	0.98	0.98	0.98
Leakage Current (mA)	0.44	0.52	0.91	0.96	1.00	1.04
Maximum Inrush Current (A peak)	30	30	30	30	30	30
Maximum Inrush Current duration (mS)	3	3	3	3	3	3

NOTES:

- The Active Answers Power Calculator should be used prior to deployment to determine the system power ratings. For proper operation, ensure the nominal input voltage selected (e.g. low line or high line) provides a max rated output wattage rating greater than the system power ratings.
- The Active Answers Power Calculator is available via the online tool located at URL: http://h30099.www3.hp.com/configurator/powercalcs.asp.
- To drill down to calculators:
  - Click on: "ProLiant Servers"
  - Click on the Server of interest. Example: ML370 G5
  - Click on: "Power Calculator" link. (You may need to scroll down to see it)

Power Cords (13 Cord Sets, 1.83m)	Power Cord Part Number
Country	
APD	139867-005
APD	100613-008
APD	100614-009
Australia	100661-001
Europe	100614-009
France	100614-009
Germany	100614-009
Japan	139867-005
PRC	286498-001
PRC	286496-001
PRC	286496-001
UK	100613-008
US	121565-001

Technical Specifications

System Unit	Tower Dimensions (H x W x D) (with bezel)		18.38 x 8.63 x 28.5 in (46.67 x 21.92 x 72.39 cm)
	Rack Dimensions (H x W x D) (with bezel)		8.63 x 17.5 x 26.5 in (21.92 x 44.45 x 67.31 cm)
	Tower Weight (approximate)	Maximum (two hard drives, power supply, and processor installed)	77 lbs (34.93 kg)
		Minimum (one hard drive, power supply, and processor installed)	68 lbs (30.84 kg)
	Rack Weight (approximate)	Maximum (two hard drives, power supply, and processor installed)	68 lbs (30.84 kg)
		Minimum (one hard drive, power supply, and processor installed)	59 lbs (26.76 kg)
	Input Requirements (per power supply)	Rated Line Voltage	90 - 132 VAC, 180 - 264 VAC
		Rated Input Current	7.5A (at 100 VAC), 3.8A (at 200 VAC)
		Rated Input Frequency	47 to 63 Hz
		Rated Input Power	980W (at 100 VAC) 1035W (at 120 VAC) 1170W (at 240 VAC)
	BTU Rating	BTU/HR	3350 BTU/hr (at 100 VAC) 3530 BTU/hr (at 120 VAC) 3990 BTU/hr (at 240 VAC)
	Power Specifications		To review typical system power ratings use the Power Calculator which is available via the online tool located at URL: http://h30099.www3.hp.com/configurator/calc/ Power%20Calculator%20Catalog.xls
			- Click on the system of interest. Example: ML370 G5 - Follow the instructions of the next screens.
	Power Supply Output (per power supply)	Rated Steady-State Power	800 W (at 100 VAC) 850 W (at 120 VAC) 1000 W (at 200-240 VAC)
		Maximum Peak Power	800 W (at 100 VAC) 850 W (at 120 VAC) 1000 W (at 200-240 VAC)
	System Inlet Temperature	Operating	10° to 35°C (50° to 95°F) at sea level with an altitude derating of 1.0°C per every 305 m (1.8°F per every 1000 ft) above sea level to a maximum of 3050 m (10,000 ft), no direct

Technical Specifications

| | | sustained sunlight. Maximum rate of change is 10°C/hr (18°F/hr). The upper limit may be limited by the type and number of options installed.
System performance may be reduced if operating with a fan fault or above 30°C (86°F). |
|---|---|---|
| | Non-operating | -30° to 60°C (-22° to 140°F). Maximum rate of change is 20°C/hr (36°F/hr). |
| **Relative Humidity** (non-condensing) | Operating | 10 to 90% relative humidity (Rh), 28°C (82.4°F) maximum wet bulb temperature, non-condensing. |
| | Non-operating | 5 to 95% relative humidity (Rh), 38.7°C (101.7°F) maximum wet bulb temperature, non-condensing. |
| **Altitude** | Operating | 3050 m (10,000 ft). This value may be limited by the type and number of options installed. Maximum allowable altitude change rate is 457 m/min (1500 ft/min). |
| | Non-operating | 9144 m (30,000 ft). Maximum allowable altitude change rate is 457 m/min (1500 ft/min). |

Acoustic Noise   Listed are the declared A-Weighted sound power levels (LWAd) and declared average bystander position A-Weighted sound pressure levels (LpAm) when the product is operating in a 23°C ambient environment. Noise emissions were measured in accordance with ISO 7779 (ECMA 74) and declared in accordance with ISO 9296 (ECMA 109).

Idle

| | LWAd | 6.2 B for Redundant
6.3 B for Non-Redundant |
|---|---|---|
| | LpAm | 43 dBA for Redundant
44 dBA for Non-Redundant |

Operating

| | LWAd | 6.2 B for Redundant
6.3 B for Non-Redundant |
|---|---|---|
| | LpAm | 43 dBA for Redundant
44 dBA for Non-Redundant |

Technical Specifications

Smart Array P400 Controller	Disk Drive and Enclosure Interface	3G SAS (Serial Attached SCSI)
		1.5G SATA (Serial Advanced Technology Attachment)
	SAS Connectors	2 internal (SFF8484) x4 wide port connectors
	Cache Memory Speed	DDR2-533MHz with 40 or 72-bit wide bus provides up to 4.2 GB/s maximum bandwidth.
	Server Interface	x8 2.5G PCIe provides 2GB/s maximum bandwidth.
	SAS Speed	x8 3G SAS provides 2.4GB/s maximum bandwidth.
	Cache Memory	40-bit 256MB cache (72-bit 512MB module upgrades available); ECC protection, battery-backed, and transportable
	Logical Drives Supported	Up to 32 logical drives
	Maximum Logical Drive Capacity	3 TB (6 x 500GB)
	Host Memory Addressing	64-bit, supporting greater than 4GB server memory space
	RAID Support	RAID 6 with ADG (Advanced Data Guarding) requires Battery Backed Write Cache Upgrade
		RAID 5 (Distributed Data Guarding)
		RAID 1+0 (Striping & Mirroring)
		RAID 0 (Striping)

Smart Array E200 Controller	Disk Drive and Enclosure Interface	3G SAS (Serial Attached SCSI)
		1.5G SATA (Serial Advanced Technology Attachment)
	SAS Connectors	2 internal (SFF8484) x4 wide port connectors
	Cache Memory Speed	DDR1-266 MHz provides up to 4.2 GB/s maximum bandwidth.
	Server Interface	x8 2.5G PCIe provides 2GB/s maximum bandwidth.
	SAS Speed	x8 3G SAS provides 2.4GB/s maximum bandwidth.
	Cache Memory	40-bit 256MB cache (72-bit 512MB module upgrades available); ECC protection, battery-backed, and transportable
	Logical Drives Supported	Up to 32 logical drives
	Maximum Logical Drive Capacity	3 TB (6 x 500GB)
	Host Memory Addressing	64-bit, supporting greater than 4GB server memory space
	RAID Support	RAID 6 with ADG (Advanced Data Guarding) requires Battery Backed Write Cache Upgrade
		RAID 5 (Distributed Data Guarding)
		RAID 1, 1+0 (Striping & Mirroring)
		RAID 0 (Striping)

Technical Specifications

Two embedded NC373i Multifunction Gigabit Server Adapters	Network Interface Compatibility	10Base-T/100Base-TX/1000Base-TX	
		IEEE 802.3 10Base-T	
		IEEE 802.3ab 1000Base-T	
		IEEE 802.3u 100Base-TX	
	Data Transfer Method	PCI Express, four lanes (x4)	
	Network Transfer Rate	10Base-T (Half-Duplex)	10 Mb/s
		10Base-T (Full-Duplex)	20 Mb/s
		100Base-TX (Half-Duplex)	100 Mb/s
		100Base-TX (Full-Duplex)	200 Mb/s
		1000BaseTX (Half and Full-Duplex)	2000 Mb/s
	Connector	RJ-45	
	Cable Support	10Base-T	Categories 3, 4 or 5 UTP; up to 328 ft (100 m)
		100Base-TX	Category 5 or higher UTP; up to 328 ft (100 m)
		1000Base-TX	Category 5 or higher UTP; up to 328 ft (100 m)

Environment-friendly Products and Approach	End-of-life Management and Recycling	Hewlett-Packard offers end-of-life HP product return, trade-in, and recycling programs in many geographic areas. For trade-in information, please go to http://www.hp.com/go/green. To recycle your product, please go to: http://www.hp.com/go/green or contact your nearest HP sales office. Products returned to HP will be recycled, recovered or disposed of in a responsible manner.
		The EU WEEE directive (2002/95/EC) requires manufacturers to provide treatment information for each product type for use by treatment facilities. This information (product disassembly instructions) is posted on the Hewlett Packard web site at: http://www.hp.com/go/green. These instructions may be used by recyclers and other WEEE treatment facilities as well as HP OEM customers who integrate and re-sell HP equipment.